TOWN OF MEDLEY

NW South River Drive Corridor Study Area Expansion

HEFT/ SR-25 (Okeechobee Road) to NW 121st Way (Medley West Industrial Area)

Volume II: Traffic Report

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1.0 INTRODUCTION

The purpose of the NW South River Drive Corridor Area Expansion Study is to investigate the transportation characteristics/deficiencies associated with the Town of Medley's western most industrial area and its interaction with SR-25 (Okeechobee Road) and NW South River Drive. The NW South River Drive Area Expansion is also known as "Medley West Industrial Area". This area forms a triangular wedge bounded on the north by SR-25 (Okeechobee Road) on the west by the Florida Turnpike; to the south by NW 122nd Street/Way and to the east by NW 121st Way. **This 426 acre industrial area is developing rapidly with approximately 80% (410 acres) of the area anticipated to be built out by 2008 and the remainder by 2018.**

This industrial area has three major access points connecting this area to the remainder of the Town and adjacent communities. The two primary access points are located along SR-25 (Okeechobee Road) at NW 138th Street and NW 107th Avenue respectively. Both of these connections are signalized and lead outside of the Town limits providing access to other areas of Miami-Dade County via SR-25 (Okeechobee Road). The other major access point is the intersection of NW 122nd Way and NW South River Drive on the eastern limits of this industrial area. It is also a signalized intersection. At this point the Medley West Industrial Area has access to the remainder of the Town of Medley via the NW South River Drive corridor studied under the Miami-Dade Metropolitan Planning Organization (MPO) Study titled: "NW South River Drive Corridor Study" prepared by **Corzo Castella Carballo Thompson Salman, P.A.** dated December 2003.

NW South River Drive is one of the most important and highly utilized transportation corridors in the Town of Medley. This corridor began as a two-lane service road to the adjacent parallel facility of SR-25 (Okeechobee Road). As the Town developed and industry expanded, more and more traffic was funneled into the Town. In response, NW South River Drive was transformed from a service road to a major collector road carrying a significant volume of traffic. Because of the industrial nature of the Town, a large percentage of the traffic is comprised of large tractor trailer trucks. The presence of these larger vehicles in the traffic stream significantly affects the capacity and long term maintenance of the corridor. The lack of alternative corridors in the Town's roadway grid network and the current severity and duration of the traffic congestion along this facility significantly impacts the movement of goods and services into and out of the Town. The "NW South River Drive Corridor Study" identified various improvements required to enhance mobility along NW South River Drive and access to the industrial areas within the Town of Medley east of NW 107th Avenue. This second phase of the study will address the traffic circulation issues for the Medley West Industrial Area and identify drastically needed improvements to its roadway network as a second step in addressing future expansion along NW South River Drive as well as improved access to SR-25 (Okeechobee Rd.) and the Town's transportation needs.

1.1 Purpose of Study

The purpose of this study is to provide the Town of Medley and the Miami-Dade County Metropolitan Planning Organization (MPO) with documented information on the existing conditions within the NW South River Drive Area Expansion (a.k.a Medley West Industrial Area) and its interaction with SR-25 (Okeechobee Rd.) and NW South River Drive and the need for improvements in this area. The "NW South River Drive Corridor Study" identified the need to consider planned developments in the "Pennsuco" area (the recently annexed portion of Medley) and in the proposed new annexation areas. The previous study mentioned indicated that the roadway network in these areas should be investigated to determine the impact that future developments will have on NW South River Drive.

The goal of this traffic report is to provide the Town of Medley with proper documentation on the traffic methodology findings and recommendations of improvements within the study area. These recommendations will be carried further as part of the Master Plan being developed for the area. This report involves the development of recommended design characteristics for the study area (K, D, and T), design traffic volumes (AADT, DHT and DDHV), and evaluation of operational conditions (intersection and link LOS's) for Existing conditions (2005), Opening Year (Assumes significant current development parcels complete by 2008) future No-Build and Build conditions. As well as future area build-out identified as the Design Year (2028). This report documents the information necessary to confirm the need for improvements within the Medley West Industrial Area.

1.2 Project Location

As previously mentioned the NW South River Drive Area Expansion is also known as "Medley West Industrial Area". This area forms a triangular wedge bound on the north by SR-25 (Okeechobee Road) on the west by the Florida Turnpike to the south by NW 122nd Street and to the east by NW South River Drive. It is actually located in Township 52S, Range 40E, Sections 29, and 30. **Exhibit 1-1** reflects the location map of the area.

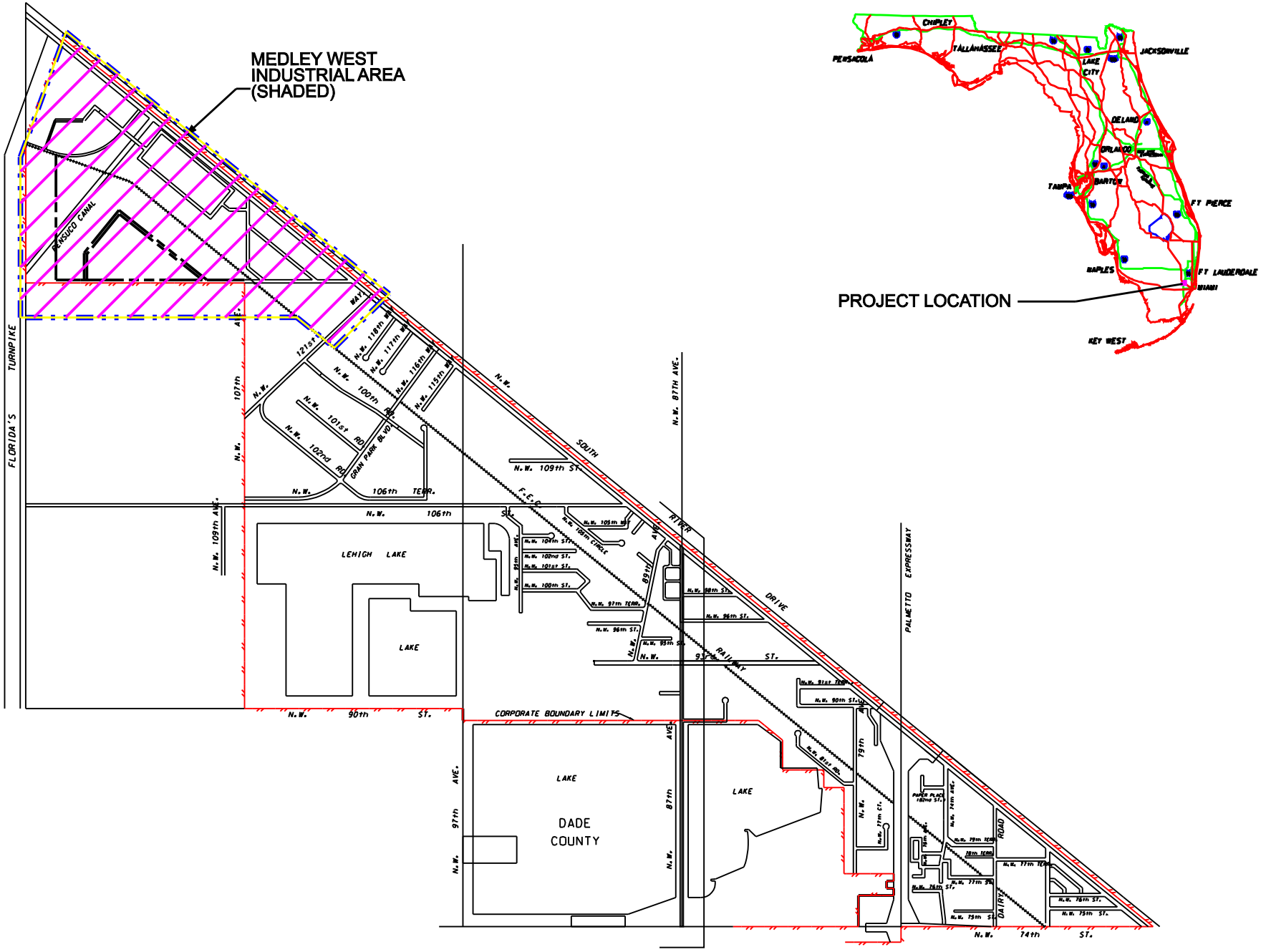

EXHIBIT 1-1

Project Location Map

1.3 Existing Roadway Network

The existing roadway network for the Medley West Industrial Area represents an odd assortment of minor and major Urban Collectors with two designated arterials. The most significant arterial is SR-25 (Okeechobee Road) to the north. This State Road is considered a Principal Arterial connecting various counties within Florida with the Town of Medley and the rest of Miami-Dade County. The industrial park connects to SR-25 (Okeechobee Road) through three main connection points. On the western end NW 138th Street which is considered a major Urban Collector provides a primary access point. In the center NW 107th Avenue designated as a Minor Arterial due to future plans to extend it north and south as a County Road Major Arterial and to the east via a connection between NW South River Drive (Considered a minor Urban collector in this area) and NW 121st Way. These major connectors are interconnected via a series of minor collectors which can be seen on **Exhibit 1-2** and include the following roadways.

- NW 113th Court
- NW 115th Avenue
- NW 122nd Street
- NW 122nd Way
- NW 127th Street

This roadway network includes four (4) signalized intersections and five (5) non-signalized intersections which will be addressed as part of this traffic report. These are listed on **Table 1.3-A**. The existing intersection geometry and lane configurations are shown in **Exhibit 1-3**.

TABLE 1.3-A
MAJOR STUDY INTERSECTIONS – EXISTING CONFIGURATION

Intersection	Traffic Control Type	Intersection Type	Comments
SR-25 & NW 138th Street	Signalized	4 legs-bridge crossing	See Note 1
SR-25 & NW 107th Avenue	Signalized	4 legs-bridge crossing	
SR-25 & NW 121st Way	Signalized	4 legs-bridge crossing	
NW S. River Dr. & NW 121st Way	Signalized	4 legs - skew	
NW 115th Avenue. & NW 138th St.	Stop Controlled	4 legs – Two Way Stop	
NW 113th Ave. Road & NW 138th St.	Stop Controlled	4 legs – Two Way Stop	
NW 127th St. & NW 107th Avenue	Stop Controlled	4 legs - Two Way Stop	
NW 122nd St. & NW 107th Avenue	Stop Controlled	3 legs – Two Way Stop	See Note 2
NW 122nd Way & NW S. River Dr.	Stop Controlled	3 legs – Two-Way Stop	

Notes

1. This intersection is currently scheduled for widening under Miami-Dade Public Works Project No. 2003191. Additional improvements are being done under FDOT Financial project ID 4164233.
2. Pan American Companies/ Town of Medley plans to grade separate this intersection by 2008.

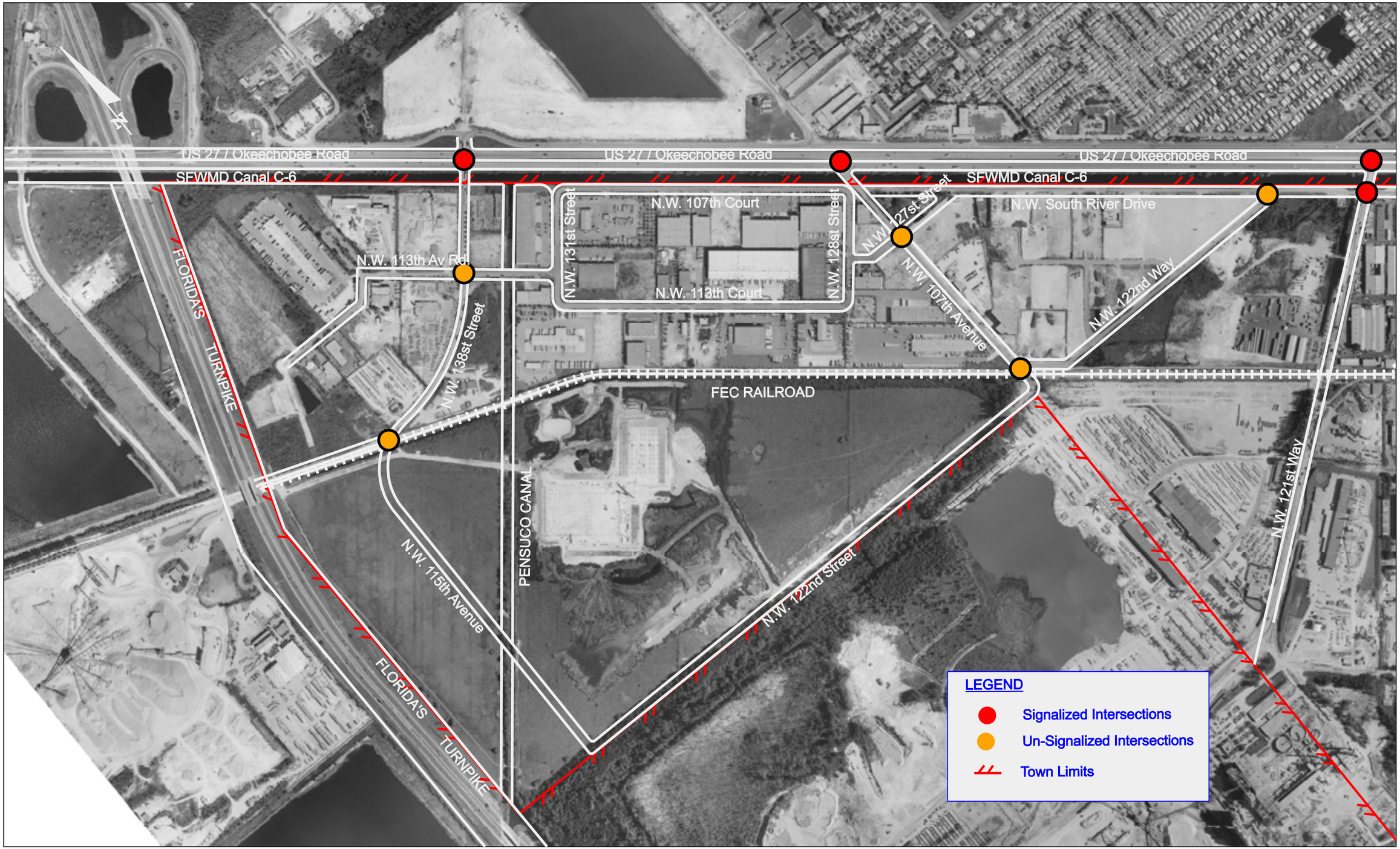

EXHIBIT 1-2
EXISTING ROAD NETWORK

US 27 / Okeechobee Road

US 27 / Okeechobee Road

US 27 / Okeechobee Road

SFWMD Canal C-6

SFWMD Canal C-6

N.W. 107th Court

N.W. 131st Street

N.W. 128st Street

N.W. 127st Street

N.W. South River Drive

N.W. 113th Av Rd

N.W. 113th Court

N.W. 107th Avenue

N.W. 122nd Way

N.W. 138st Street

FLORIDA'S TURNPIKE

FEC RAILROAD

PENSUCO CANAL

N.W. 115th Avenue

N.W. 122nd Street

N.W. 121st Way

FLORIDA'S TURNPIKE

LEGEND

- Signalized Intersections
- Un-Signalized Intersections
- Town Limits

EXHIBIT 1-3

Existing Intersection Geometry & Lane Configuration

2.0 EXISTING TRAFFIC CONDITIONS

Existing traffic volumes, turning movements, and vehicle classification counts were collected within the study area. In addition to traffic counts, the data collection efforts undertaken for this project included identifying existing roadway geometry, intersection channelization, posted speed limits, vehicle classification counts, establishing trip data for proposed developments and obtaining crash data (at intersections along SR-25 (Okeechobee Road) only). This information was gathered for the purpose of the development of recommended design characteristics (K, D, and T) for the study area, design traffic volumes (AADT and DDHV), and evaluation of operational conditions (intersection and link LOS).

2.1 Existing Traffic Methodology

The following Methodology was incorporated in order to establish existing conditions:

- Collect available traffic count information from the Florida Department of Transportation's historical traffic count records, prior area studies and from actual field count data.
- Collection of existing land use data within the area and the development of trip generation data for existing, vacant and properties which are current being developed to establish existing and potential vehicular volumes (trips) for the study area. The trip generation analysis and trip assignment methodology is discussed in detail in Section 3.4.3 of this report. A review of the Miami Urban Area Transportation Model (MUATS) was reviewed for the 2003 and 2032 model projects. This review reflected insufficient detail for the internal network within the industrial park area. Data obtained was utilized for comparative purposes only.
- Based on collected data, recommend the travel characteristics of the study area. These characteristics include Design Hour Volume Factor (K), Directional Design Hour Volume Factor (D), and Design Truck Factor (T).
- Based on collected data, estimate the AADT.
- Based on estimated AADT and the recommended design characteristics, estimate the DDHV and Design Hour turning movement for the intersections within the study area.
- Provide Link Level of Service analysis for the corridor based on existing conditions.
- Provide Level of Service analysis for the intersections for existing conditions.

2.2 Traffic Data Collection

Traffic characteristics for the project area were assembled from previous traffic data included in the "NW South River Drive Corridor Study" report as well as the Florida Department of Transportation SR-25 (Okeechobee Road) Action Plan – Level V Final Report (2004). This data was reviewed along with information from the Florida Department of Transportation's 2004 Traffic Data which includes historical traffic count records for SR-25 (Okeechobee Road). Based on this review it was determined that additional traffic data collection would be required as part of the study. Initial existing traffic count data was collected during the month of April 2005. Based on the initial findings it was determined that data obtained from the "Okeechobee Action Plan" was insufficient to address the internal circulation needs within the study area. Additional traffic data was collected during the months of July and August 2005 to supplement and properly address the data requirements of the SYNCHRO 6.0 computer traffic simulation model established for this study area. This data collection included the following information:

- A 72-hour bi-directional machine count (Volume and vehicle classification) was obtained on NW 138th Street south of SR-25 (Okeechobee Road) as shown in **Exhibit 2-1**. Collected counts were adjusted to average annual conditions based on the most current FDOT seasonal and axle adjustment factors available for this area. The vehicle classification count was utilized in establishing the percent of heavy vehicle (truck) traffic included in the traffic stream.
- 24-hour bi-directional machine counts (Volume counts) at 9 locations as shown in **Exhibit 2-1**. Collected counts were adjusted to average annual conditions based on the most current FDOT seasonal and axle adjustment factors available for this area.
- 24-hour bi-directional machine count (Volume and vehicle classification) was obtained on NW 107th Avenue north of NW 122nd Street as shown in **Exhibit 2-1**. Collected counts were adjusted to average annual conditions based on the most current FDOT seasonal and axle adjustment factors available for this area. The vehicle classification count was utilized in establishing the percent of heavy vehicle (truck) traffic included in the traffic stream.
- 4-hour manual turning movement counts at 8 locations (not including pedestrian volumes) at various signalized and listed non-signalized intersections on typical weekdays. The 4-hour counts included 2 hours in the AM peak (7 to 9 AM) and 2 hours in the PM peak (4 to 6 PM) period. These counts were taken at the signalized and non-signalized intersections reflected in **Table 1.3-A**, and depicted in **Exhibit 2-1**.
- 8-hour manual turning movement count (not including pedestrian volumes) at the signalized intersection of NW 107th Avenue and SR-25 (Okeechobee Road) on typical weekday. The 8-hour counts include 3 hours in the AM peak (7 to 9 AM), 2 hours at Mid-day (11 AM to 1 PM) and 3 hours in the PM peak (3:30 to 6:30 PM) period as depicted in **Exhibit 2-1**.

- Data collection of three years of accident history from the FDOT Crash Analysis Reporting System (CARS) along SR-25 (Okeechobee Road). This data was taken from the SR-25 (Okeechobee Road) Final Action Plan as prepared by Kimley-Horn and Associates for the Florida Department of Transportation.
- Traffic signal timings and phasing data were obtained from Miami-Dade County Public Works Department Traffic Control Center for the four (4) signalized intersection within the project limits. These intersections included:
  - NW 138th Street and SR-25 (Okeechobee Road)
  - NW 107th Avenue and SR-25 (Okeechobee Road)
  - NW 121st Way and SR-25 (Okeechobee Road)
  - NW 121st Way and NW South River Drive

The development of existing and future No-build traffic projections involved the establishment of existing intersection geometry and signal timings. The intersections geometric information was collected during the traffic count data collection phase and complemented when necessary with aerial photographs of the study area. The existing geometry is of crucial importance to determine the existing operational conditions (LOS) of the intersections under consideration. Geometry can be observed on most of the figures presented as part of the traffic analysis. As indicated above the existing traffic signal timing information was collected from the Miami-Dade Signal and Signing Division. In Miami-Dade County all traffic signals are coordinated and controlled by the County including those on the State Road system.

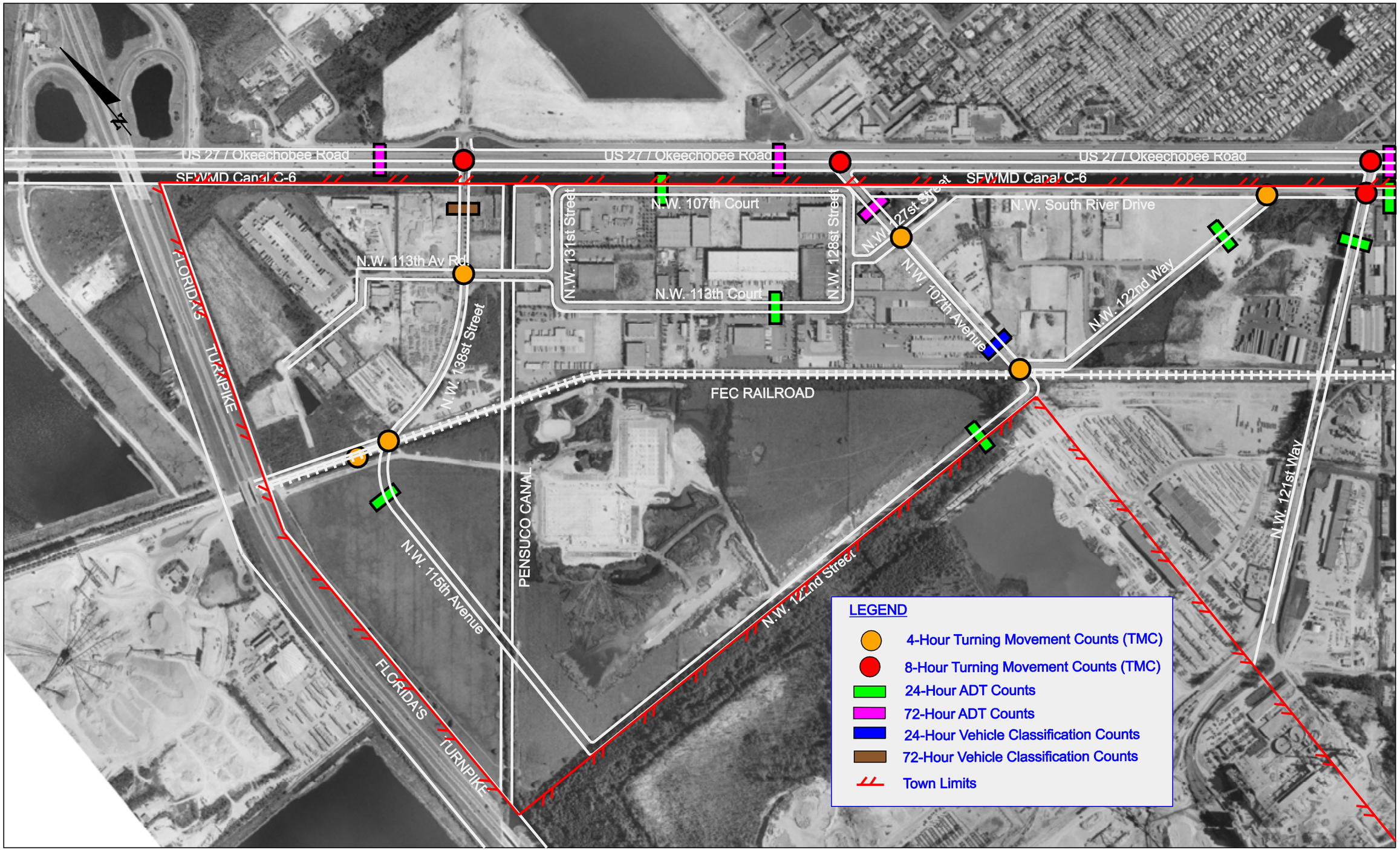

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EXHIBIT 2-1

Location of Traffic Counts Collected

2.3 Traffic Characteristics

Design Hour Factors were utilized to convert future daily traffic forecasts to Design Hour Volumes (DHV's) and Directional Design Hour Volumes (DDHV's). The following section provides an overview of the procedures applied for selecting the design factors to use for the study. These design factors include:

- K_{30} Factor: This factor represents the Peak Hour to Daily Volume Ratio of the thirtieth highest hourly volume in a year to the Average Annual Daily Traffic (AADT).
- D_{30} Factor: This factor by definition is the ratio of the design hour peak direction traffic count to the design hour total count. The D_{30} factor is calculated by taking the average of the "D" factors for the 28th, 29th, 30th, 31st and 32nd highest hourly counts.
- T_{30} Factor: This is the design hour truck factor which constitutes the percentage of trucks and busses within the design hour divided by 2.

According to the FDOT Project Traffic Forecasting Handbook, the determination of K_{30} and D_{30} values should be determined from existing Telemetered Traffic Monitoring Sites (TTMS) on the State Highway System. However, there is only one existing arterial TTMS site within a 5-mile radius of the project area. This site is TTMS 2536 and is located on SR-25 (Okeechobee Road) 1000-ft from the northbound ramp to the Homestead Extension of the Florida Turnpike (HEFT) was reviewed. The 2004 data for this site reflected a K-Factor of 9.01%, a D-Factor of 53.3% and a T-Factor of 23.8% for SR-25 (Okeechobee Road). The Departments database did not include the 200th Highest Hourly Count report; therefore a determination following standard procedures could not be made. These values however were consistent with those outlined in the Florida Department of Transportation "Final Action Plan – Level V Okeechobee Road (US 27 / SR 25) from Krome Avenue (SR 997) to NW 79th Avenue" as prepared by Kimley-Horn and Associates, Inc. dated July 2004. No TTMS data is available for the Town of Medley's internal collector roads. Therefore, the existing peak hour to daily volume ratio's (K) were evaluated in order to determine an appropriate K30 value for the study.

To properly evaluate the traffic conditions along the collectors, traffic characteristics were developed based on traffic data collected. Based on adjusted (Correction for Seasonal Factors and Axle Correction Factors) 24-hour and 72-hour volume machine counts obtained within the study area; measured Peak Hour to Daily Ratio, K and Directional Distribution D values where obtained. These are summarized in **Appendix A**. The measured Peak Hour Factors (K) for the collector roads ranged between 8.0% and 13.8%. While the measured Directional Distribution Factor (D) ranged between 50.2% and 58%. These ranges represent the highest values of either the A.M. or P.M. peak periods. Based on this evaluation a K_{30} factor of 8.89% was selected for the collector roads. This value was consistent with the value utilized in the initial NW South River Drive Corridor Study.

The D_{30} factor selected was 56%. This represented a higher value than the 52.66% utilized in the initial NW South River Drive Corridor Study, but was found to be more representative of the field data collected.

The values associated with the design hour truck factor T_{30} varied from the original number (10%) utilized in the initial study. Given the concentrated industrial growth two classification counts were performed within the study area. The first was taken along NW 107th Avenue; just north of NW 122nd St. This classification count revealed a Truck and bus percentage of 27.7%. The second classification count was taken along NW 138th Street just south of SR-25 (Okeechobee Road). This count resulted in a Truck and bus percentage of 41.1%. Based on this data a design hour Truck Factor, T_{30} of 13.85% was used for the collectors (Including NW 107th Avenue and NW South River Drive west of NW 121st Way). For NW 138th Street a T_{30} of 20.55% was utilized.

2.4 Crash Data Analysis

Based on crash analysis performed for the SR-25 (Okeechobee Road) Action Plan, two crash patterns were noted prevalent at the intersection of SR-25 (Okeechobee Road) and NW 138th Street for the years 1997 through 1999. (Subsequent crash data analysis for 2000-2002 was also performed for that study which confirmed with the 1997-1999 analysis.) Angle crashes involving northbound through traffic on NW 138th Street and westbound through traffic on SR-25 (Okeechobee Road) accounted for 19 percent of all intersection crashes. Southbound rear-end crashes on NW 138th Street account for 12 percent of all crashes at this intersection. A collision diagram from the Action Plan showing the crashes from 1997 through 1999 at the intersection of SR-25 (Okeechobee Road) and NW 138th Street is included in **Appendix D**.

A safety ratio equal to or greater than 1.0 indicates that a spot or segment is a high crash location. Based on the documented crash analysis, the safety ratio was found to be greater than 1.0 for 1998 and 1999 for the segment of -25 (Okeechobee Road) from the Turnpike to NW 107th Avenue. A high crash location was also identified at NW 138th Street for 1999. The following **Table 2.4-A** highlights the high crash listings previously identified within this study's project limits.

TABLE 2.4-A
CRASH DATA

Year	High Crash Listing	BMP	EMP	Length	Safety Ratio	Location
1998	Segment	5.170	6.161	0.991	1.427	HEFT to NW 107th Ave.
1999	Spot	5.650	5.661	0.011	2.095	NW 138th St.
	Segment	5.180	6.183	1.003	1.324	HEFT to NW 107th Ave.

2.5 Existing Traffic Volumes (2005 Background Traffic)

In order to calculate the existing (2005) AADT volumes, 24-hour counts were reviewed and 72-hour traffic count data were first averaged. At a given count location, a daily count which was abnormally high or low was compared to the other counts at that location to verify the accuracy of the average. Next, the current (2004) FDOT seasonal factor and axle correction factor obtained from the 2004 Florida Traffic Information CD were applied to each averaged daily volume to arrive at the AADT. The seasonal adjustment factor varied by count location, as the counts were not all collected during the same week. The existing (2005) AADT volumes resulting from these calculations are displayed on **Exhibit 2-2**.

The existing peak hour volumes for the study intersections were developed from the turning movement counts collected. Using the AADT's created, approach volumes for the 30th highest hour were calculated. This was accomplished by applying K_{30} and D_{30} factors, developed for the study, to the AADT's.

The resulting approach volumes were then distributed using the percentages calculated from the raw turning movement counts. The K_{30} and D_{30} factors and turning movement percentages were then reconciled with the traffic counts to make the approach and departure percentages and volumes for each intersection more closely resemble the observed percentages and volumes from the raw turning movement counts. The K_{30} and D_{30} factors and turning movement percentages were also reconciled so that the approach/departure volumes from each intersection were compatible with the adjacent intersections. The process that was used follows the FDOT Design Traffic Handbook procedures for converting estimated average annual daily traffic (AADT) to design hour volumes (DHV). The existing (2005) A.M. and P.M. peak design hour volumes (DHV) are displayed in **Exhibits 2–3**.

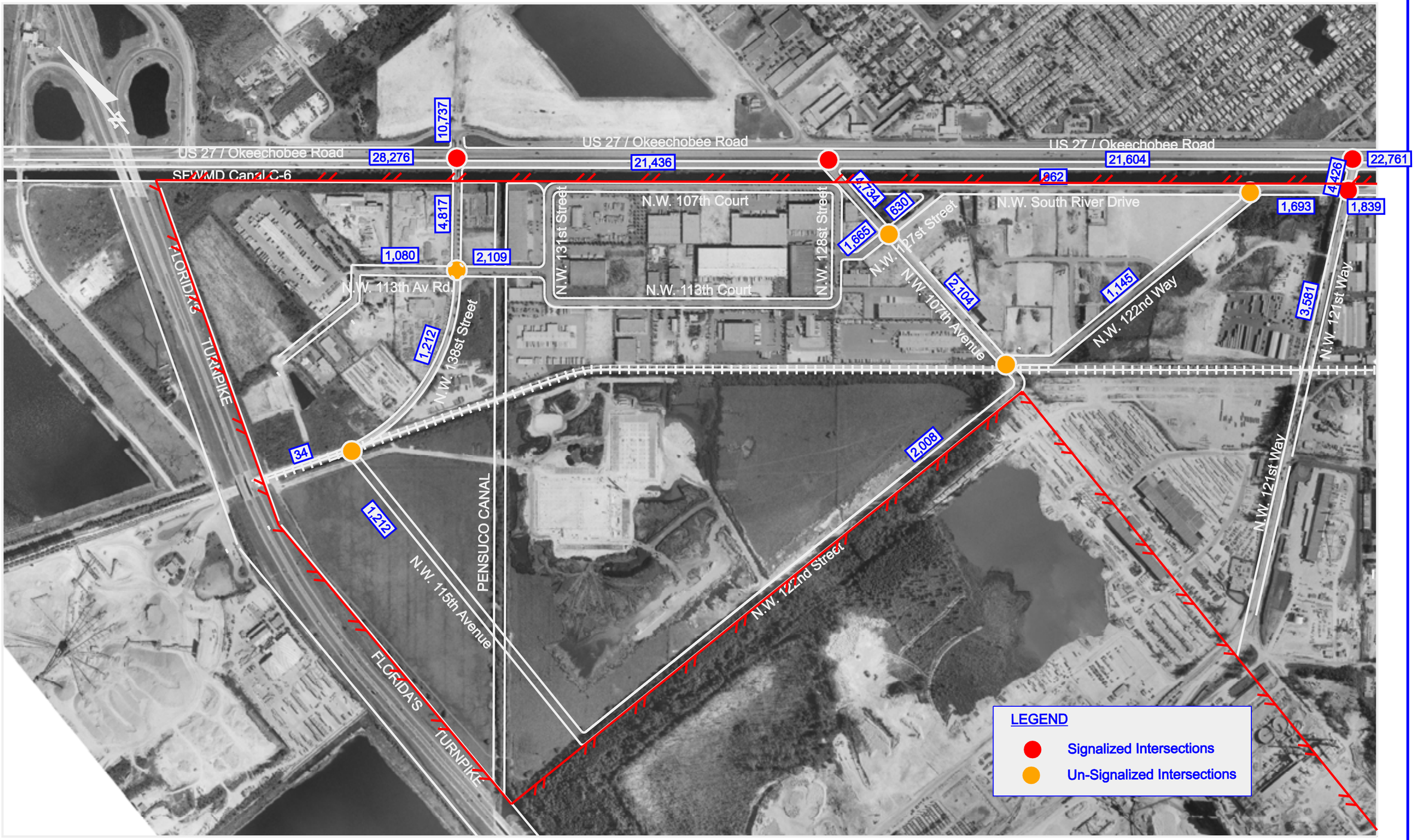

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EXHIBIT 2-2

Existing Link AADT

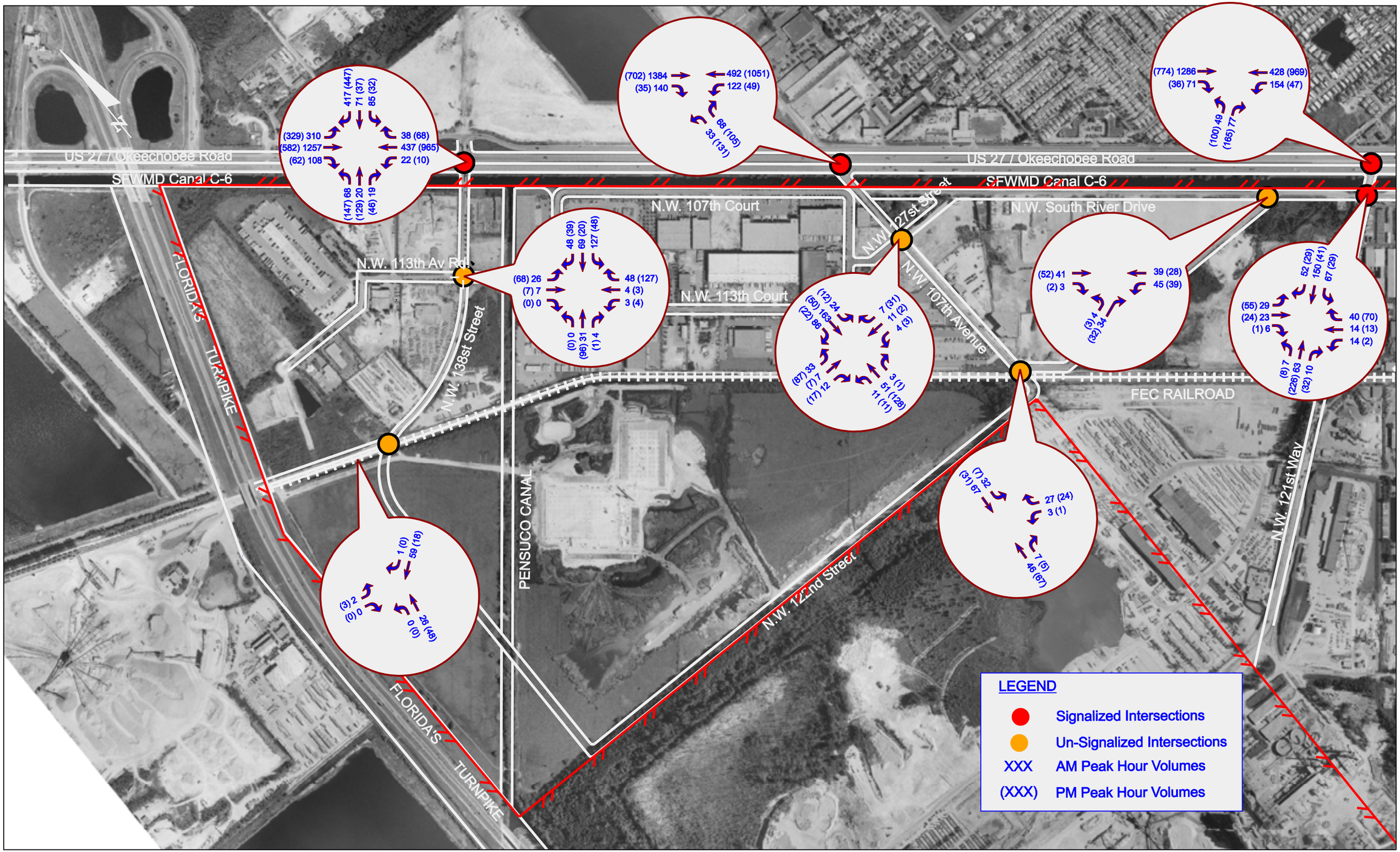

EXHIBIT 2-3

Existing Intersection Peak Hour Turning Movement Counts (TMC)

2.6 Existing Level of Service

Level of service analysis for the signalized, non-signalized intersections and arterial/collector segments within the study area was determined using the latest adopted procedures from the 2000 Highway Capacity Manual (HCM). This study uses the HCM concept of LOS as the traffic performance measure. LOS as defined by the HCM is "A qualitative measure describing operational conditions within a traffic stream, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety". There are five possible LOS classifications that can be used to describe a particular roadway segment or intersection. The HCM uses two distinct measures of traffic performance depending on the operation being analyzed. For the analysis of a signalized or non-signalized intersection, the performance criterion is the amount of delay (in seconds) that a driver would experience at the intersection. However, for the analysis of a section of roadway, the performance criterion is the average travel speed that the driver would experience while traversing that segment of roadway. These performance measures range from LOS "A", which is typically associated with either high speeds and/or free-flow conditions with negligible delays to LOS "F" representative of low speeds and/or heavy congestion with long delays. LOS "B" through "E" indicates intermediate performance. In particular, LOS "E" represents operation of a facility at its design capacity. The measures are also based on roadway classification. SR-25 (Okeechobee Road) is classified as a Type I (Principal Arterial) with typical free flow speeds of 50 miles per hour. NW 138th Street and NW 107th Avenue are classified as an Urban Collector and Minor Arterial respectively. These are Type III or IV facilities with typical free flow speeds of 35 miles per hour. All other collectors including NW South River Drive in this area are classified as Urban Collectors, but have been identified as Type IV facilities with free flow speeds of less than 30 mile per hour. The following definitions have been excerpted from the HCM:

- LOS A describes primarily free-flow operations at average travel speeds, usually about 90% of the free-flow speed for the arterial classification (arterial speeds > 42 mph for class I, > 30 mph for a class III and > 25 mph for a class IV facility). Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.

- LOS B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification (arterial speeds > 34 to 42 mph for a class I, > 24 to 30 mph for a class III and > 19 to 25 mph for a class IV facility). The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome.

- LOS C represents stable operations; however, ability to maneuver and change lanes in mid-block locations may be more restricted than at LOS B. Average travel speeds are about 50 percent of the free-flow speed (arterial speeds > 27 to 34 mph for a class I, > 18 to 24 mph for a class III and > 13 to 19 mph for a class IV facility).

- LOS D borders on a range in which small increases in flow may cause substantial increases in delay and hence decreases in arterial speed. Average travel speeds are about 40 percent of free-flow speed (arterial speeds > 21 to 27 mph for a class I, > 14 to 18 mph for a class III and > 9 to 13 mph for a class IV facility).

- LOS E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less (arterial speeds > 16 to 21 for a class I, > 10 to 14 mph for a class III and > 7 to 9 mph for a class IV facility).

- LOS F characterizes arterial flow at extremely low speeds below one-third to one-fourth of the free-flow speed. Intersection congestion is likely at critical signalized locations, with high delays and extensive queuing (arterial speeds is less than or equal to 16 mph for a class I, less than or equal to 10 mph for a class III and less than or equal to 7 mph for class IV facility).

For Signalized and Non-Signalized (Stop Controlled) intersections the Level of Service is based on the seconds of delay a vehicle experiences in attempting to maneuver through the intersection. The Level of service is summarized in **Table 2.6-A**.

TABLE 2.6-A
LEVEL OF SERVICE (LOS) CRITERIA

LOS	Control Delay per Vehicle (seconds/vehicle)	
	Signalized Intersections	Non-Signalized Intersections
A	≤ 10	≤ 10
B	>10 – 20	>10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	≥ 80	≥ 50

2.6.1 Existing Roadway Network Link Level of Service

A Level of Service analysis was also performed on the major roadway link within the study area. The Arterial LOS is based on the speed and the Arterial Class and was obtained using SYNCHRO 6. **Table 2.6-B** shows a summary of the LOS results obtained. The existing AADT for the roadway links are shown in **Exhibit 2-2**. A detailed analysis report is included in **Appendix H**

TABLE 2.6-B
EXISTING ROADWAY LINK LEVEL OF SERVICE

Arterial	Cross Street	2005 AM				2005 PM			
		NW / NE		SE / SW		NW / NE		SE / SW	
		Link Speed	LOS	Link Speed	LOS	Link Speed	LOS	Link Speed	LOS
SR-25 (Okeechobee Road) / US 27	NW 138th Street	38.6	B	18.3	E	35.4	B	20.4	E
	NW 107th Avenue	45.1	A	33.0	C	44.0	A	37.2	B
	NW 121st Way	36.3	B	40.4	B	35.7	B	42.7	A
NW South River Drive	NW 121st Way	6.2	F	10.6	E	8.0	E	10.8	E
NW 138th Street	SR-25 (Okeechobee Road) / US 27	26.9	B	3.1	F	21.9	C	3.7	F
NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	28.7	B	28.7	B	27.0	B	27.0	B
NW 121st Way	NW South River Drive	8.0	E	7.7	E	7.3	E	8.3	E

The existing LOS reflects that the majority of the corridor is already at capacity. The main arterials which provide access into the project area, i.e NW 107th Avenue and NW 138th Street will be operating at unacceptable LOS E or worse. The NW South River Drive arterial segment within the project limits is also expected to operate at unacceptable LOS E or worse during the analysis period. The remaining collectors within the project limits are expected to operate at acceptable LOS within the analysis period.

2.6.2 Existing Intersection Level of Service

Signalized analyses were performed for four (4) signalized intersections within the study area using SYNCHRO 6.0, a software package for modeling and optimizing traffic signal and intersection network operations. SYNCHRO 6.0 requires the peak hour turning volumes, geometric conditions, and existing signal phasing and timing information (see **Appendix B**) as input. The signal phasing and timing information used for analysis was obtained from the Miami-Dade County Public Works Department – Signals Division, and the data was supplemented with field measurements in a few locations. . The existing intersection TMC are shown in **Exhibit 2-3.** Detail results of the analysis are shown in **Appendix I.**

The results of the A.M. and P.M. peak hour level of service (LOS) analyses for the signalized intersections are reported in **Tables 2.6-C to 2.6-F**. The LOS standard for intersections and turning movements were set at the Highway Capacity Manual standard for acceptable LOS, which is D or better. As indicated in tables most of the intersections within the study area are operating at acceptable levels of D or better.

TABLE 2.6-C
EXISTING (2005) LOS FOR SR-25 (OKEECHOBEE ROAD) AND NW 138TH STREET INTERSECTION

Approach	Movement	Number of Lanes	AM Peak Hour				PM Peak Hour			
			Movement		Approach		Movement		Approach	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Southeast	Left	1	6.0	A	8.9	A	50.0	D	22.8	C
	Thru	3	9.8	A			9.1	A		
	Right	1	7.0	A			8.0	A		
Northeast	---	0	---	---	38.7	D	---	---	128.1	F
	LT-Thru-RT	1	38.7	D			128.1	F		
	---	0	---	---			---	---		
Northwest	Left	1	7.9	A	10.4	B	10.2	B	15.1	B
	Thru	3	10.6	B			15.4	B		
	Right	1	9.5	A			11.9	B		
Southwest	---	0	---	---	34.4	C	---	---	51.4	D
	LT -Thru	1	39.9	D			30.7	C		
	Right	1	32.2	C			54.6	D		
Intersection Delay					**15.4**	**B**			**37.1**	**D**
Intersection v/c ratio					**0.56**				**1.00**	

TABLE 2.6-D
EXISTING (2005) LOS FOR SR-25 (OKEECHOBEE ROAD) AND NW 107TH AVENUE INTERSECTION

Approach	Movement	Number of Lanes	AM Peak Hour				PM Peak Hour			
			Movement		Approach		Movement		Approach	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Southeast	Left	0	---	---	19.4	B	---	---	13.4	B
	Thru	3	20.0	C			13.5	B		
	Right	1	13.3	B			11.2	B		
North	---	0	---	---	28.4	C	---	---	34.7	C
	LT-RT	1	28.4	C			34.7	C		
	---	0	---	---			---	---		
Northwest	Left	1	46.6	D	14.3	B	40.6	D	9.1	A
	Thru	3	6.2	A			7.7	A		
	Right	0	---	---			---	---		
South	---	---	---	---	---	---	---	---	---	---
	---	---	---	---			---	---		
	---	---	---	---			---	---		
Intersection Delay					**18.4**	**B**			**13.6**	**B**
Intersection v/c ratio					**0.52**				**0.44**	

TABLE 2.6-E
EXISTING (2005) LOS FOR SR-25 (OKEECHOBEE ROAD) AND NW 121ST WAY INTERSECTION

Approach	Movement	Number of Lanes	AM Peak Hour				PM Peak Hour			
			Movement		Approach		Movement		Approach	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Southeast	Left	0	---	---	13.2	B	---	---	9.3	A
	Thru	3	13.9	B			9.6	A		
	Right	1	1.6	A			1.3	A		
Northeast	Left	1	24.4	C	24.0	C	27.7	C	26.5	C
	---	0	---	---			---	---		
	Right	1	23.7	C			25.7	C		
Northwest	Left	1	36.7	D	9.7	A	5.9	A	0.4	A
	Thru	3	0.0*	A			0.1*	A		
	Right	0	---	---			---	---		
Southwest	---	---	---	---	---	---	---	---	---	---
	---	---	---	---			---	---		
	---	---	---	---			---	---		
Intersection Delay					**12.9**	**B**			**7.3**	**A**
Intersection v/c ratio					**0.62**				**0.30**	

* Northwest bound movement along SR-25 (Okeechobee Road) is free flow

TABLE 2.6-F
EXISTING (2005) LOS FOR NW SOUTH RIVER DRIVE AND NW 121ST WAY INTERSECTION

Approach	Movement	Number of Lanes	AM Peak Hour				PM Peak Hour			
			Movement		Approach		Movement		Approach	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Southeast	---	0	---	---	49.0	D	---	---	67.8	E
	LT-Thru-RT	1	49.0	D			67.8	E		
	---	0	---	---			---	---		
Northeast	---	0	---	---	6.9	C	---	---	6.6	A
	LT-Thru-RT	2	6.9	A			6.6	A		
	---	0	---	---			---	---		
Northwest	---	0	---	---	37.6	D	---	---	36.2	D
	LT-Thru-RT	1	37.6	D			36.2	D		
	---	0	---	---			---	---		
Southwest	Left	1	4.4	A	4.9	A	4.3	A	4.3	A
	Thru-RT	1	5.1	A			4.4	A		
	---	0	---	---			---	---		
Intersection Delay					**15.3**	**B**			**21.1**	**C**
Intersection v/c ratio					**0.23**				**0.21**	

Analysis of the existing conditions at the signalized intersections indicates **excessive delays for the northeast bound approach at the intersection of NW 138th Street and SR-25 (Okeechobee Road) during the PM peak period**. This is due to the relatively high left and through vehicular movements utilizing just a single shared lane. At the NW 107th Avenue and SR-25 (Okeechobee Road) intersection, the northwest approach left-turn movement is currently operating at LOS D due to the relatively high left-turn traffic volume. This reflects a potential need for improvements in the near future.

There are five major non-signalized intersections within the study area that were analyzed utilizing the non-signalized intersection procedures included in the 2000 HCM. It was observed that all the non-signalized intersections currently operate at satisfactory LOS B or better with the exception of the service road north of the SR-25 (Okeechobee Road) which currently operates at LOS C or better.

3.0 FUTURE CONDITIONS

The development of the future Travel Demand Forecast typically utilizes the locally approved travel demand model. The MUATS is based on the Florida Standard Urban Transportation Modeling Structure (FSUTMS). The model is recognized by the FDOT and area Metropolitan Planning Organizations (MPO's) as the accepted modeling tool for Miami-Dade County. The model was reviewed in accessing future daily traffic demand within the study area. The Metropolitan Planning Organization (MPO) for the Miami Urbanized Area adopted MUATS model consists of 2005, 2015, 2025 and 2030 data sets. The model takes into account 2030 socio-economic data and projects proposed under the County's Long Range Transportation Plan. The model data reviewed consisted of the 2003 and 2032 outputs for Directional PSWADT (see Appendix C). This model is a planning tool used in determining the requirements for the future transportation system in terms of lane geometry needs. The modeling process addresses impacts to land use on an area-wide basis considering both population and employment trends. Results of these models are typically reviewed and adjusted where appropriate to reflect local circumstances and factors. The data reflected in the model did not reflect sufficient detail within the study area collectors to adequately develop design traffic for the internal urban collector system. For this reason a detailed trip generation study was conducted to assist in the development of the design traffic for both the 2008 and 2028 study years.

3.1 Future Area Developments

The study area currently has about 75 acres under development. By the year 2008 these properties will be completed and begin to generate traffic. In addition two Miami-Dade County and FDOT projects will be constructed. The main project which will need to be considered as being completed by 2008 is the Miami-Dade County Bridge Replacement project at NW 138th Street and the Miami Canal. In addition to this project proposed intersection improvements to the Signal at NW 138th Street and SR-25 (Okeechobee Road) by FDOT will be completed by 2008. Along with these government sponsored projects, Pan American Development intends to complete the grade separation of NW 107th Avenue over the FEC Railroad at NW 122nd Street. This will connect NW 107th Avenue with NW 122nd Street. Completion for this project is expected by 2008.

3.2 Future Traffic Characteristics

Proposed traffic characteristics shall remain the same as per the analysis of existing conditions. The only major difference is the use of a 2.0% growth factor for existing traffic as well as the future conditions. The methodology applied considered the use of a 2.0% growth rate for background traffic for the period between existing (2005) and area build out (2008). The trip generation analysis results described in the next section were added to the background adjusted traffic to establish true volumes for 2008 and 2018. This

traffic was grown at a rate of 2.0% until the 2028 design year for the long-term projects. The 2% growth rate was established by reviewing the FDOT Trend Analysis spreadsheet considering historical data along SR-25 (Okeechobee Road). In addition the prior studies for the area were reviewed. The results validated the selection of a 2% growth rate for the analysis.

3.3 Future Traffic Methodology

The traffic methodology utilized in developing the future design hour volumes and associated AADT's followed similar steps as which were outlined under the existing traffic projects. The major exception is that a detailed trip generation analysis was required to establish the 2008 and 2018 travel demand forecast. Details of the procedures utilized are outlined in the following sections.

3.4 Traffic Forecast Analysis

Based on planned growth and discussion held with the Town of Medley, by 2008 approximately 80% of the Medley West Industrial Area will be built-out and generating traffic. In order to quantify the transportation impact of the Medley West Industrial Area, an analysis was undertaken to evaluate traffic generation characteristics of the existing and proposed land uses.

3.4.1 Existing Land Use

The existing land uses within the study area were quantified using aerial map coverage, the Town of Medley's Industrial area water and sewer planning parcel maps and data acquired from the Miami-Dade County Property Appraiser's office. The developed database linked parcel level data, by Parcel Identification number, to existing (2005) land use type, square footage and property acreage for all properties within the study area. Properties currently being developed were reviewed for anticipated business use, while undeveloped properties were associated with potential future uses based on parcel zoning and similar area businesses. The existing property database contained 135 parcels. Each parcel reflected in the database included in **Appendix F** was also identified by Folio Number, site address and ownership data as well. A "windshield" survey was conducted for all of the parcels to verify land use and associated development intensities.

3.4.2 Planned and Programmed Improvements

The NW 138th Street Bridge Project over the Miami River Canal is currently under design by the County. The existing two-lane bridge is planned to be widened to five lanes. The project also includes milling and resurfacing of all approaches. The NW 138th Street bridge project is tentatively scheduled for construction late 2006 or early 2007.

Roadway improvements to the intersection of SR-25 (Okeechobee Road) and NW 138th Street are being planned by the FDOT. An additional eastbound left turn lane is being proposed as well as modifications to the lane movements on the southbound approach. The letting date for this project is approximately 2007.

The construction of an elevated roadway over the Florida East Coast (FEC) Railroad at NW 107th Avenue and NW 122nd Street is expected to be completed by 2008. This bridge is required to reduce the potential increase in vehicular and rail traffic resulting from anticipated increase in traffic within the project area. The study report for this project has been completed and is on file with the Town of Medley. The study was prepared by **Corzo Castella Carballo Thompson Salman, P.A.** and is dated May 2004.

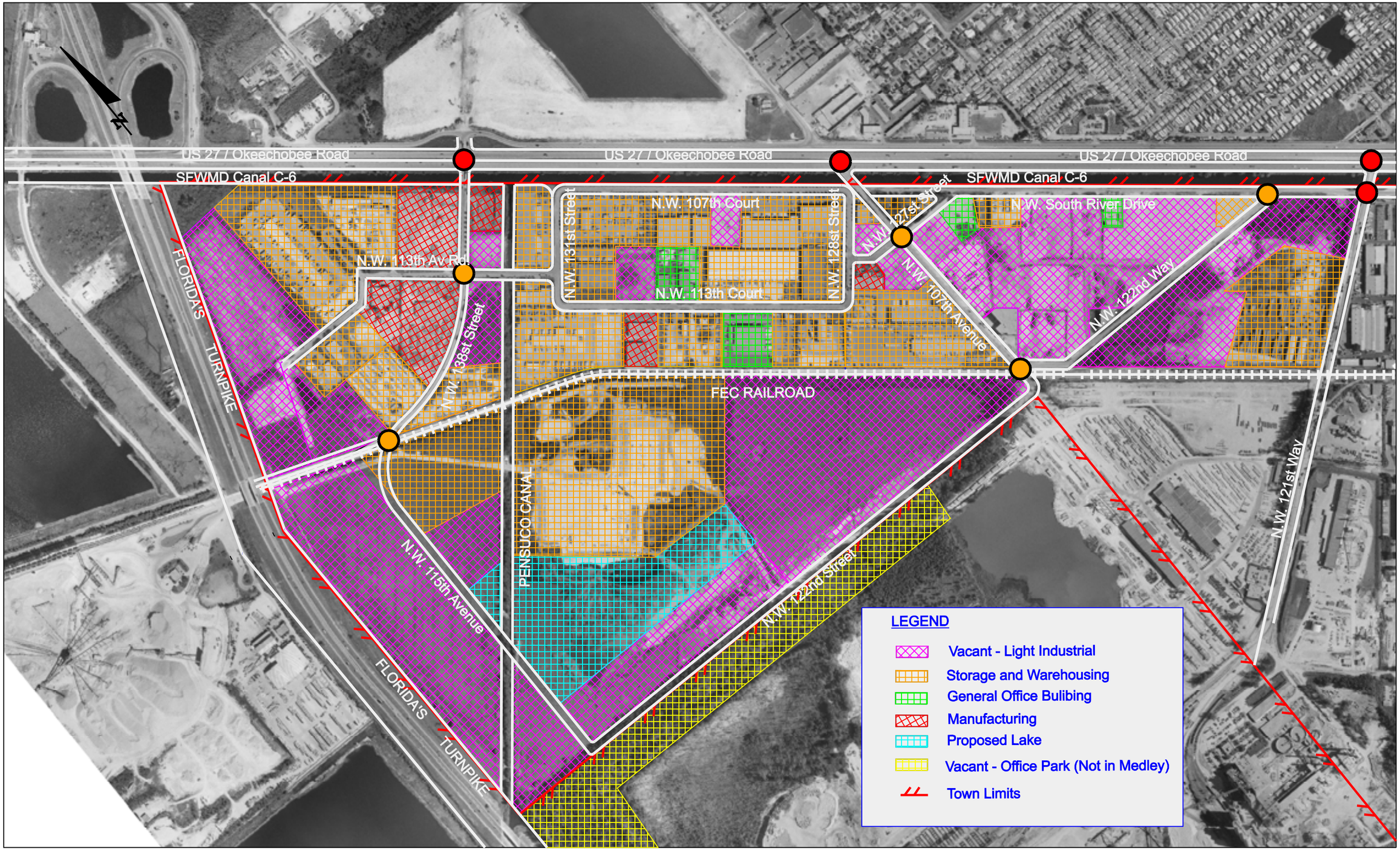

EXHIBIT 3-1

Land Use Pattern

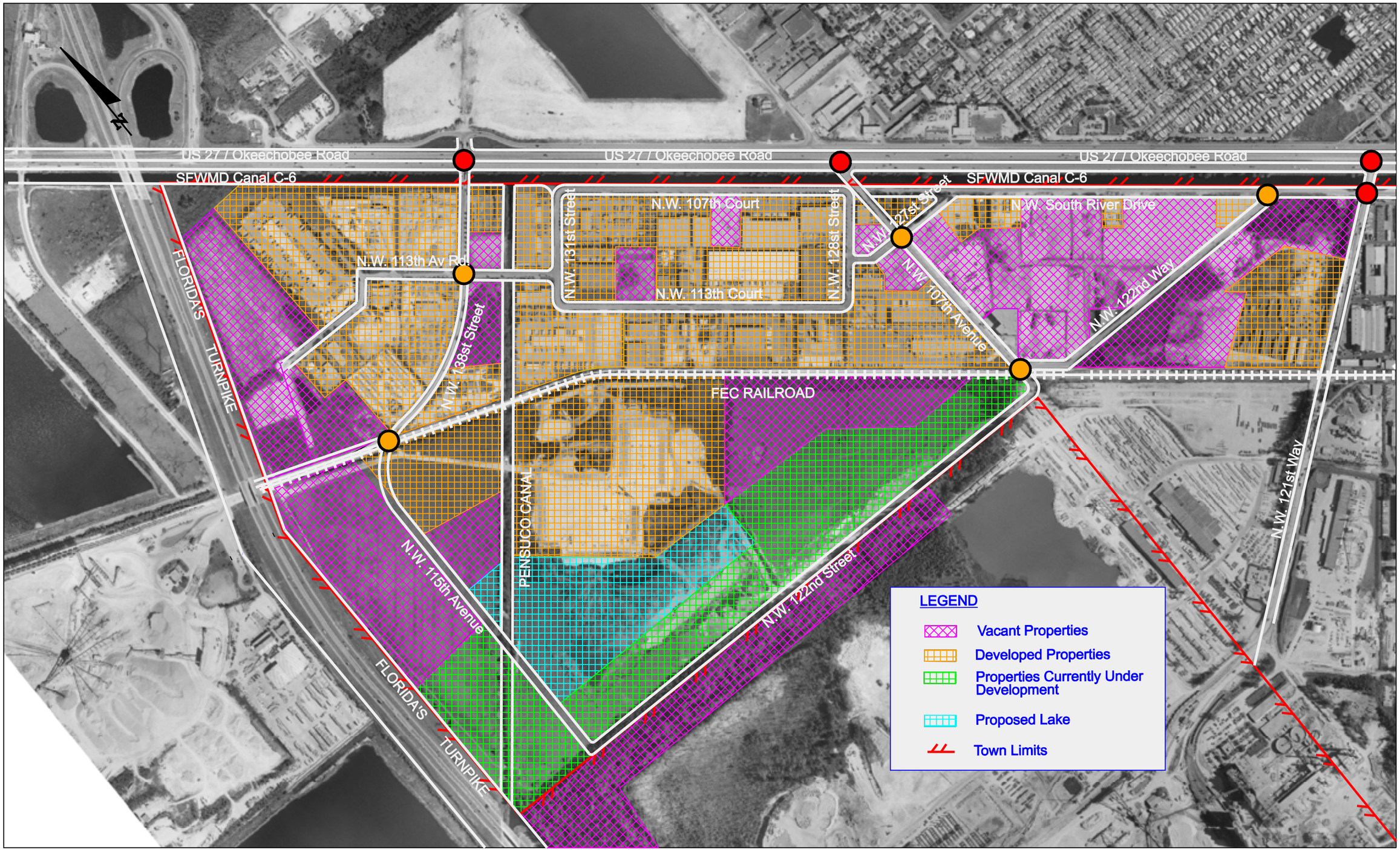

EXHIBIT 3-2

Properties Currently Under Development

3.4.3 Trip Generation Analysis

The development of the land use database for the study area provided a more precise estimate of the expected daily trip ends to and from the project area for the analysis horizon period. From the land use database, it was found that approximately 52% of the project area (representing approximately 223 acres) is currently developed while the remaining 48% are vacant lots (representing approximately 203 acres). The predominant land use pattern for the project is storage and warehousing representing 86% of the developed area. Other land use patterns such as manufacturing and offices account for 11% and 4% respectively of the remaining land use.

In order to model the future trip ends to and from the project area, ten (10) trip generation zones (TGZ) were identified within the project area as shown in **Exhibit 3-3**. These TGZ's were demarcated based on how trip ends from a particular zone on would influence the intersections with the project area. **Table 3.4-A** shows the intersections influenced by each TGZ. Each lot within the project area was then assigned to one of these TGZ's

TABLE 3.4-A
INTERSECTIONS INFLUENCED BY TRIP GENERATION ZONE (TGZ)

TGZ	Intersections Influenced	Approach Direction	Adjacent Roadway Link
T1	NW 113rd Avenue & NW 138th Street	North	NW 113rd Avenue
T2	NW 115th Avenue & NW 138th Street	South	NW 115th Avenue & NW 122nd Street
	NW 107th Avenue & NW 122nd Street	South	
T3	NW 113rd Avenue & NW 138th Street	South	NW 113rd Avenue & NW 127th Street
	NW 107th Avenue & NW 127th Street	West	
T4	NW 107th Avenue & NW 127th Way	South	NW 107th Avenue
	NW 107th Avenue & NW 122nd Way	North	
T5	NW 107th Avenue & NW 122nd Way	East	NW 122nd Way
	South River Drive & NW 122nd Way	West	
T6	South River Drive & NW 122nd Way	North	South River Drive
T7	NW 115th Avenue & NW 138th Street	North	NW 138th Street
	NW 113rd Avenue & NW 138th Street	West	
T8	NW 113rd Avenue & NW 138th Street	East	NW 138th Street
	SR-25 (Okeechobee Road). & NW138th Street	West	
T9	NW 113th Avenue & NW 138th Street	West	NW 138th Street
T10	NW 121st Way	West	NW 121st Way

To obtain future trip ends from the vacant lots within the project area, the average development size was estimated from the existing developments. The development size is defined as the average building size in sq ft that would be built on a vacant lot i.e.

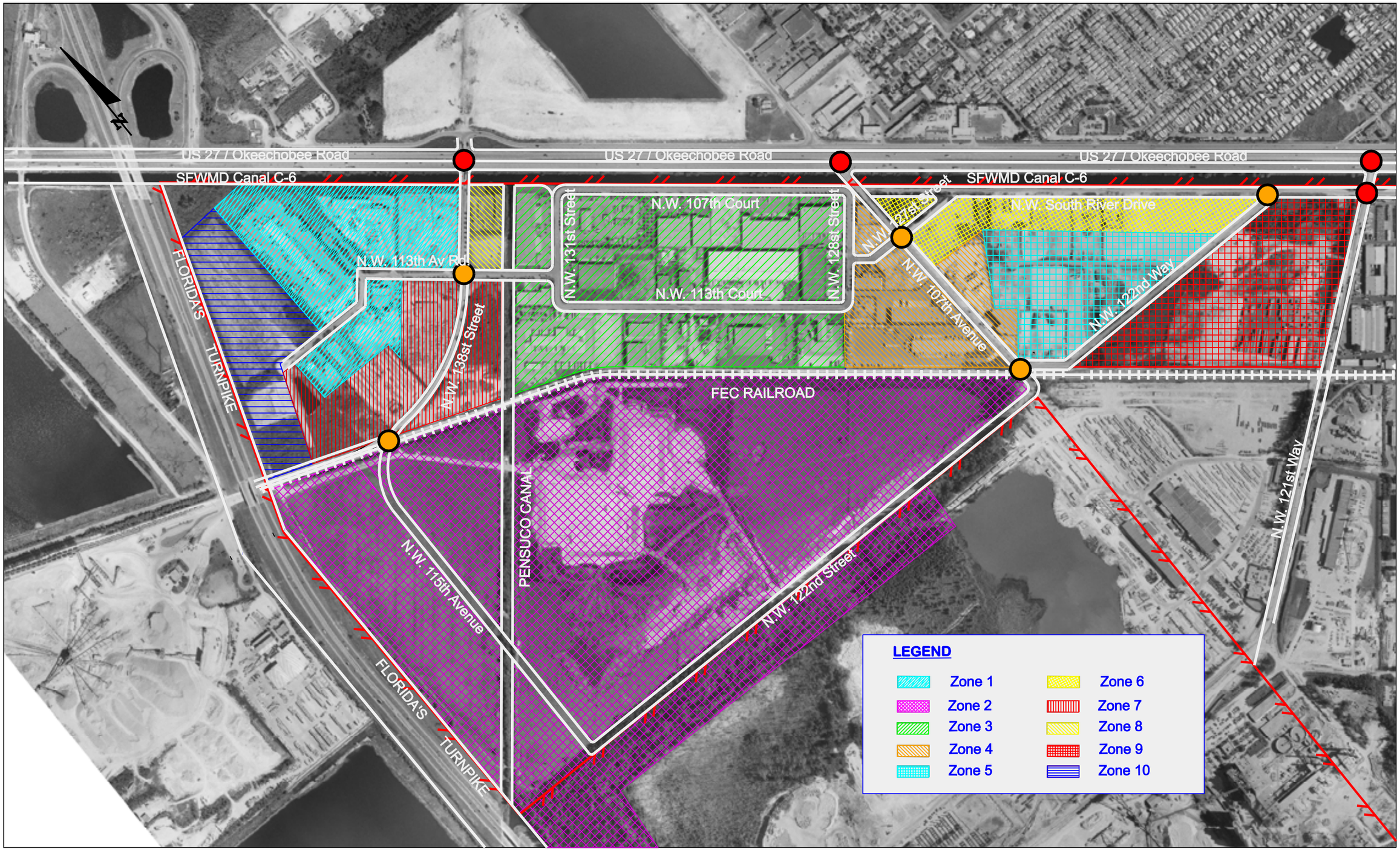

EXHIBIT 3-3

Traffic Analysis Zones for Trip Generation

$$\text{Development's Size} = \frac{Total\ Building\ Size\ (sq\ ft)}{Lot\ Size\ (acre)}$$

For the developed lots within the project are the average development size was estimated from the existing total building size and the total lot size occupied and is given as:

$$\text{Existing Developments Size} = \frac{2{,}482{,}862}{203} = 12{,}231 \text{ sq ft/acre}$$

Based on the development size for the existing developed lots within the project area, an average development size of 12,000 sq ft/acre was assumed for the vacant lots. Using this value, the development size was then computed for each vacant lot.

The Town of Medley / Miami-Dade zoning characteristic for the project area is Industrial - Light Manufacturing. Also, based on Miami-Dade County's Adopted 2005-2015 Land Use Plan, significant changes in land use are not expected within the study limits. The Town of Medley's Comprehensive Plan for future land use is also in concurrence with the County's 2005-2015 Plan. According to South Florida future land use data compiled by the Florida Geographic Data Library (FGDL), the future land use in the area is planned to be completely industrial with no outlying agricultural areas. This is in accord with the planned developments taking place as shown in **Exhibit 3-2**. Based on this premise, it was assumed that the land use for the vacant lots would also be storage and warehousing. The land use pattern map is shown in **Exhibit 3-1**.

Trip generation computations were developed using rates established by the Institute of Transportation Engineers' (ITE) "Trip Generation Report", 7th Edition. ITE provides trip generation calculations based upon regression and average rates of these equations utilizing sample sizes from similar facilities based on ITE Land Use Codes. A summary of the rates and equations can be found in **Table 3.4-B** below. Trip generation was performed for daily traffic, and AM and PM peak hours. The trip generation rates for each area were compared / calibrated utilizing the existing 24 hour volume counts and existing land uses only. Once the final rates were established, then future projections were included in the analysis. These trip generation rates and equations specified in the ITE trip generation table 140, (Manufacturing), 150 (Warehouse), and 710 (General Office Building) was used to estimate the trip ends from each of the TGZ within the project area.

TABLE 3.4-B TRIP GENERATION RATES				
ITE Table	**Period**	**Trip Generation Rate**	**R^2**	**Standard Deviation**
140	Daily	T = 3.88(x) – 20.70	0.87	3.07
	AM Peak	T = 0.73(x)	N/A	1.04
	PM Peak	T = 0.74(x)	N/A	1.01
150	Daily	T = 4.96(x)	N/A	4.05
	AM Peak	T = 0.45(x)	N/A	0.74
	PM Peak	T = 0.47(x)	N/A	0.80
710	Daily	Ln (T) = 0.77 Ln (x) +3.65	0.80	6.13
	AM Peak	Ln (T) = 0.80 Ln (x) +1.55	0.83	1.39
	PM Peak	T = 1.12 (x) + 78.81	0.82	1.37

For comparison purposes, trip ends for the existing developments within the project area were also estimated. From the estimates it was observed that the estimated trip ends were more than the actual trips observed. This disparity could be due to the fact that the project area is currently not generating traffic to its full potential.

3.4.4 Trip Distribution and Assignment

The daily trips generated from each TGZ were assigned to the corresponding adjacent roadway link identified in **Table 3.4-A**. These trips represent the additional two-way AADT expected to be added to the existing AADT on each of the roadway links. The generated AADT was the converted to the directional peak hour volumes using the K_{30} and D_{30} factors obtained in Section 2.3. The K_{30} and D_{30} factors were adjusted slightly as necessary to make the approach and departure percentages for each intersection more closely resemble the observed percentages from the raw turning movement counts (This is known as balancing). The K_{30} and D_{30} factors were also slightly adjusted so that the approach/departure volumes from one intersection were reconciled with the next intersection where there are no access points between intersections. This process is in accordance with the FDOT Design Traffic Handbook procedures for converting estimated average annual daily traffic (AADT) to design hour traffic (DHT) volumes. The approach and departure trips were then split into the peak hour directional movements at each of the intersections using the peak hour TMC percentages obtained from the raw counts. **Appendix G** shows the trip balancing analysis and results.

3.5 Travel Demand Model Data

As previously mentioned the MUATS Model outputs were reviewed and utilized for regional comparative purposes only. Copies of the model outputs are included in **Appendix C** for reference purposes only.

3.6 Future Traffic Volumes

Future Design Hour Traffic (DHT) volumes were developed for each roadway link and each intersection within the study area for Opening Year (2008) conditions, Mid-Year (2018) conditions and Design Year (2028) conditions. Based on the current and planned developments within the project area, it is projected that approximately 80% of the project area will be developed by 2008 and the remaining 20% developed by 2018. Thus in developing the future year DHT volumes for the opening year, trips from vacant properties expected to be developed by 2008 were added to the existing background traffic adjusted from 2005 to 2008 using a 2% growth rate. Similarly, to establish true DHT volumes for 2018, trips from the remaining vacant properties were added to the 2008 traffic adjusted to 2018 using a 2% growth rate. To obtain the design year volumes, the 2018 traffic was extrapolated at a rate of 2% until 2028. **Exhibits 3-4** to **3-9** show the future traffic volumes for the roadway links and intersections within the study area.

3.7 Future Level of Service

In order to identify future network capacity deficiencies within the project area, a level of service (LOS) analysis for the future conditions was performed for the intersections and roadways links within the study area using the same procedure outlined in Section 2.6.

3.7.1 Roadway Network Link LOS – No-Build Scenario

Twelve (12) roadway links within the project were evaluated for Opening year (2008), Mid-year (2018) and Design year (2028) conditions. The projected Design Hour Traffic (DHT) volumes for these conditions form the basis for the future roadway network link capacity analysis. The future roadway links AADT are shown **in Exhibits 3-4 to 3-6**. The future conditions were evaluated using HCM arterial analysis included in the SYNCHRO 6 software. The 'No-Build Scenario roadway network consists of the existing characteristics plus committed roadway improvements identified in Section 3.4.2. **Table 3.7-A** shows a summary of the roadway link LOS analysis. Detail analysis results are shown in **Appendices J to L**

The results reveal that most of the main arterials which provide access into the project area will be operating almost at capacity by the opening year. The NW 138th Street, NW 121st Way and NW South River Drive will be operating at unacceptable LOS E or worse by 2008. The NW 107th Avenue arterial is also expected to operate at unacceptable LOS E or worse by 2028.

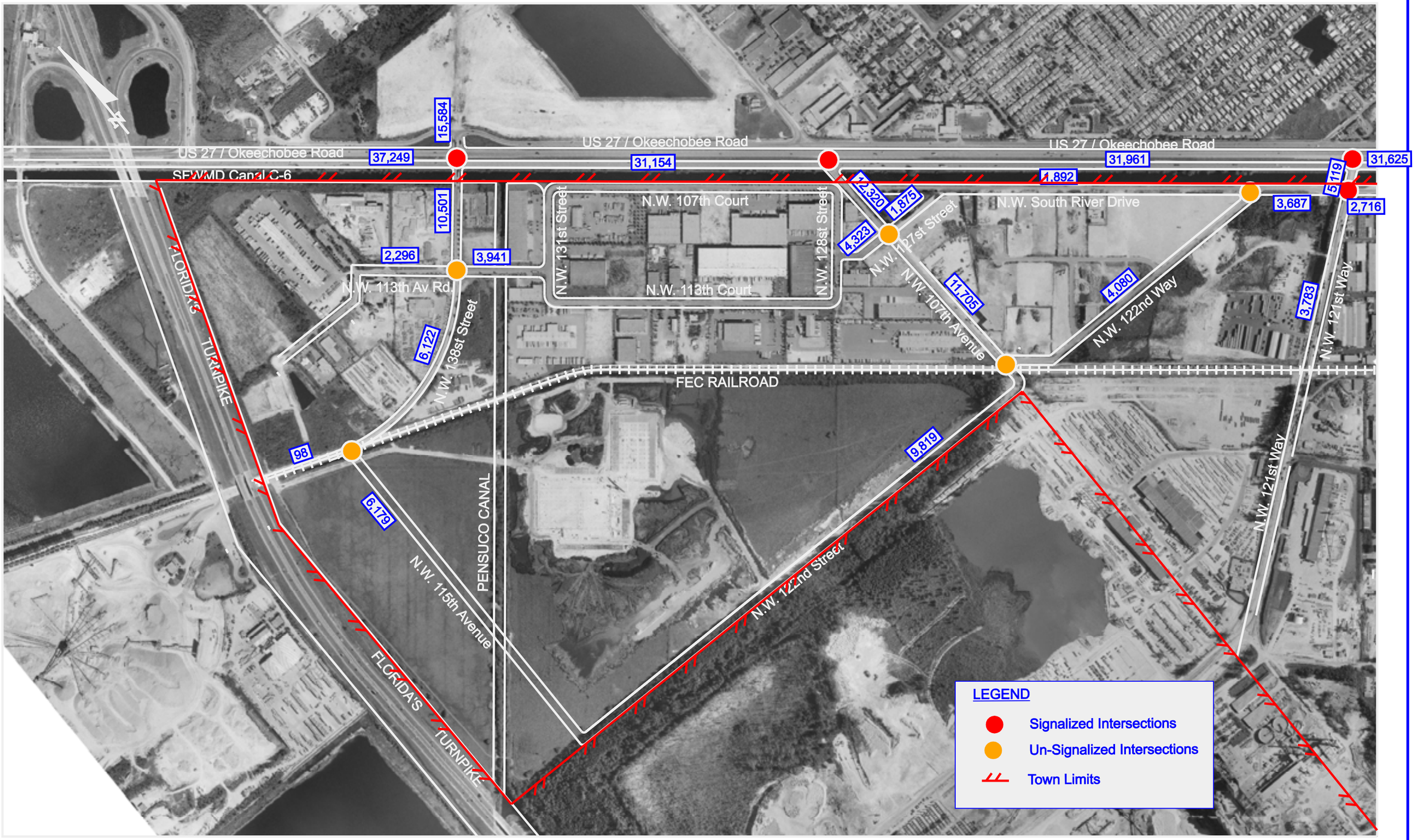

EXHIBIT 3-4

Future AADT Link Forecast (2008)

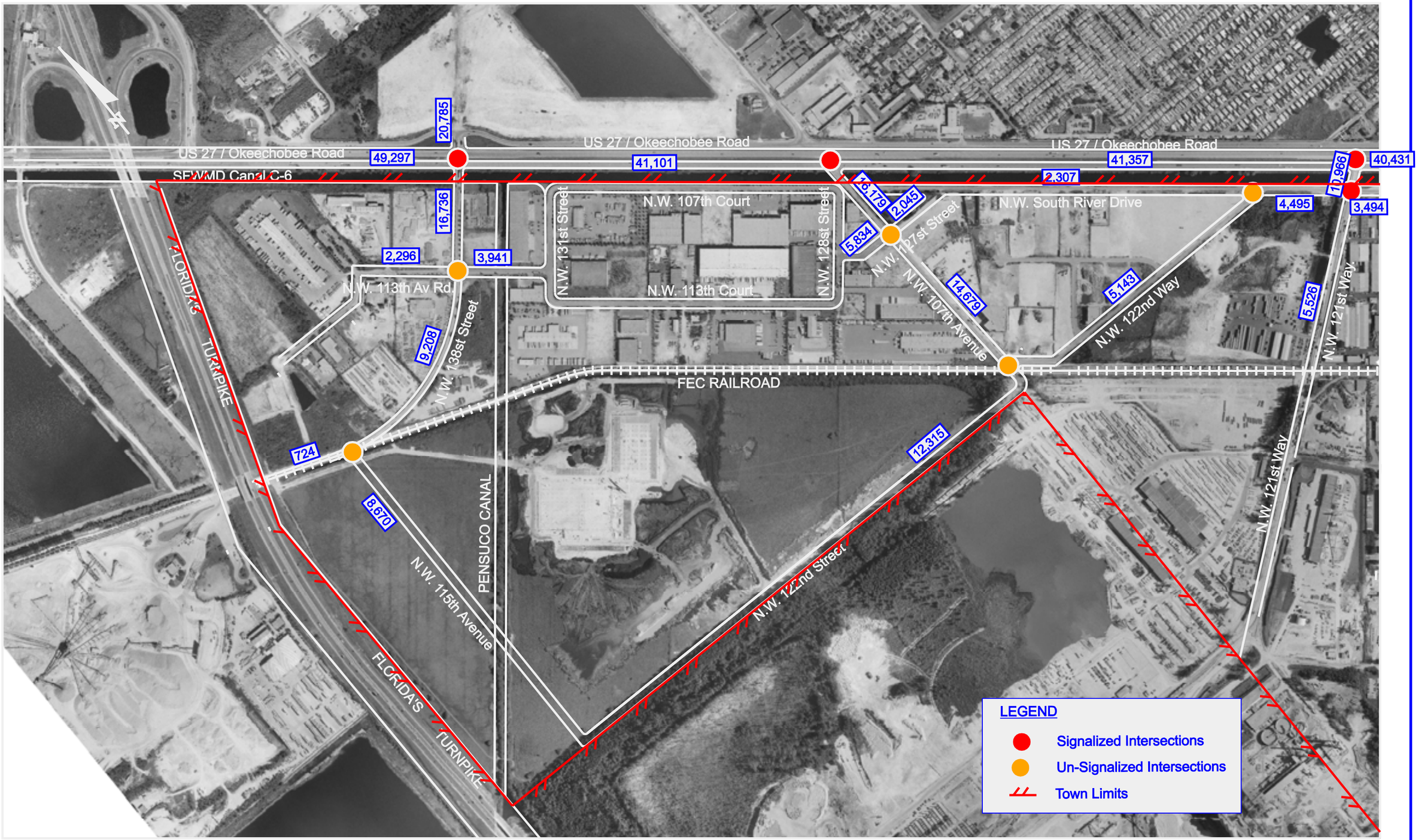

EXHIBIT 3-5

Future AADT Link Forecast (2018)

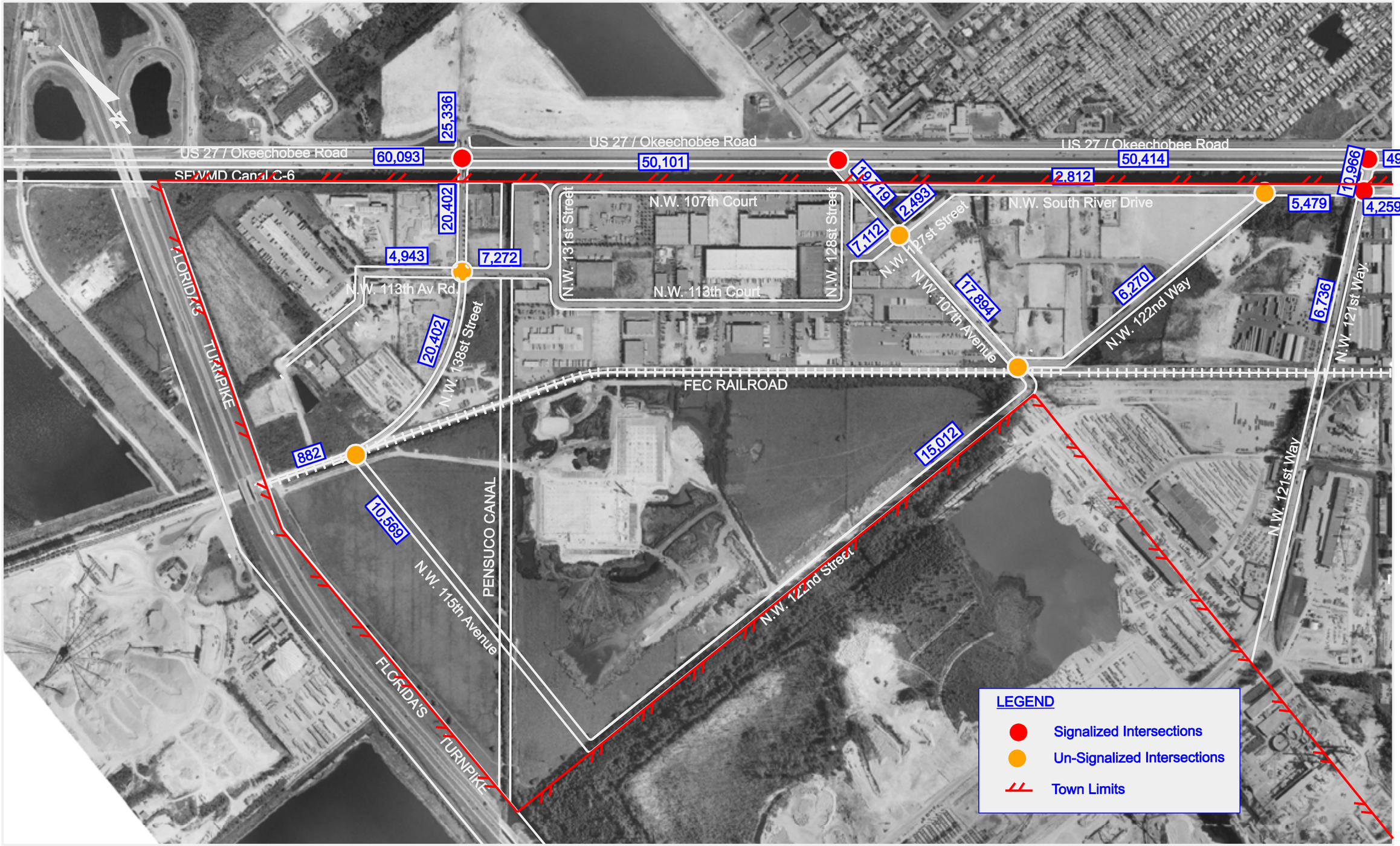

EXHIBIT 3-6

Future AADT Link Forecast (2028)

TABLE 3.7-A ROADWAY LINK LOS ANALYSIS (2008, 2018, 2028)						
Arterial		Cross Street	AM PEAK		PM PEAK	
			NW / NE	SE / SW	NW / NE	SE / SW
2008 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	C	F	B	F
		NW 107th Avenue	B	D	C	D
		NW 121st Way	B	B	C	B
	NW South River Drive	NW 121st Way	F	F	E	E
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	C	C	B	B
	NW 121st Way	NW South River Drive	E	F	F	F
2018 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	D	F	F	F
		NW 107th Avenue	B	F	E	E
		NW 121st Way	B	C	B	B
	NW South River Drive	NW 121st Way	F	F	E	F
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	D	D	C	C
	NW 121st Way	NW South River Drive	E	E	F	F
2028 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	E	F	F	F
		NW 107th Avenue	B	F	F	F
		NW 121st Way	B	D	C	C
	NW South River Drive	NW 121st Way	F	F	E	F
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	E	E	D	D
	NW 121st Way	NW South River Drive	E	E	F	F

3.7.2 Intersection LOS – No-Build Scenario

Four (4) signalized intersections and five (5) unsignalized intersections were evaluated for Opening Year (2008) and Design Year (2028) conditions. Projected Peak Hour turning movement volumes for both AM and PM peak periods obtained from the traffic forecast analysis for these conditions were used for the future intersection capacity analysis. . The future intersections TMC are shown **in Exhibits 3-7 to 3-9**. The future conditions were evaluated using SYNCHRO 6.0. The No-Build roadway network consists of the existing characteristics plus committed roadway improvements identified in Section 3.4.2.

Tables 3.7-B to 3.7-D show a summary of the intersection LOS analysis for 2008, 2018 and 2028 respectively. Detail analysis results are shown in **Appendices M to O**

TABLE 3.7-B
INTERSECTION CAPACITY ANALYSIS FOR 2008 – NO-BUILD SCENARIO

Intersections		Movement	AM PEAK PERIOD				PM PEAK PERIOD			
			Approach		Intersection		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNALIZED INTERSECTIONS	SR-25 (Okeechobee Road) & NW 138th Street	SE	43.3	D	39.2	D	89.2	F	59.2	D
		NW	33.7	C			35.6	D		
		NE	50.6	D			45.7	D		
		SW	24.7	C			38.2	D		
	SR-25 (Okeechobee Road) & NW 107th Avenue	SE	46.4	D	44.6	D	38.3	D	42.4	D
		NW	28.0	C			44.1	D		
		NB	66.7	E			43.7	D		
		SB	-	-			-	-		
	SR-25 (Okeechobee Road) & NW 121st Way	SE	18.0	B	17.2	B	15.9	B	8.7	A
		NW	12.3	B			0.7	A		
		NE	34.4	C			18.1	B		
		SW	-	-			-	-		
	NW 121st Way & NW South River Drive	SE	33.4	C	24.9	C	29.3	C	31.1	C
		NW	34.2	C			30.1	C		
		NE	21.8	C			32.4	C		
		SW	20.2	C			31.1	C		
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	14.0	B	0.4	A	13.9	A	0.1	A
		WB	14.2	B			0.0	B		
		NB	0.0	A			0.0	A		
		SB	0.0	A			0.0	A		
	NW 138th Street & NW 113rd Av Road	SE	40.6	E	5.9	A	74.7	F	10.5	B
		NW	12.3	B			13.9	B		
		NE	0.0	A			0.0	A		
		SW	4.5	A			4.0	A		
	NW 107th Avenue & NW 127th Street	EB	77.2	F	8.5	A	335.2	F	56.4	F
		WB	45.9	E			19.1	C		
		NB	2.9	A			1.3	A		
		SB	1.4	A			2.0	A		
	NW 138th Street & Service Road	SE	9.9	A	13.3	B	10.2	B	13.4	B
		NW	10.1	B			9.9	A		
		NE	11.1	B			15.1	C		
		SW	14.8	B			10.7	B		
	NW South River Drive & NW 122nd Way	EB	11.4	B	10.1	B	11.7	B	10.1	B
		WB	-	-			-	-		
		SE	7	A			7.2	A		
		NW	10.8	B			11.1	B		

TABLE 3.7-C
INTERSECTION CAPACITY ANALYSIS FOR 2018 – NO-BUILD SCENARIO

Intersections		Movement	AM PEAK PERIOD				PM PEAK PERIOD			
			Approach		Intersection		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNALIZED INTERSECTIONS	SR-25 (Okeechobee Road) & NW 138th Street	SE	133.4	F	101.7	F	175.9	F	117.7	F
		NW	44.4	D			86.6	F		
		NE	147.2	F			84.5	F		
		SW	24.0	C			92.0	F		
	SR-25 (Okeechobee Road) & NW 107th Avenue	SE	125.5	F	115.7	F	58.4	E	107.6	F
		NW	49.5	D			114.2	F		
		NB	193.1	F			157.4	F		
		SB	-	-			-	-		
	SR-25 (Okeechobee Road) & NW 121st Way	SE	26.7	C	24.0	C	19.7	B	9.9	A
		NW	16.3	B			1.0	A		
		NE	40.7	D			15.0	B		
		SW	-	-			-	-		
	NW 121st Way & NW South River Drive	SE	36.9	D	21.5	C	31.6	C	34.4	C
		NW	38.4	D			31.2	C		
		NE	19.1	B			33.3	C		
		SW	13.4	B			41.1	D		
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	21.4	C	1.8	A	20.0	C	1.4	A
		WB	18.7	C			0.0	A		
		NB	0.0	A			0.0	A		
		SB	0.0	A			0.0	A		
	NW 138th Street & NW 113rd Av Road	SE	7757.3	F	433.3	F	9048.2	F	1061.0	F
		NW	33.7	D			32.5	D		
		NE	0.0	A			0.0	F		
		SW	5.6	A			4.8	C		
	NW 107th Avenue & NW 127th Street	EB	6371.9	F	453.5	F	7797.5	F	1400.3	F
		WB	226.6	F			37.0	F		
		NB	4.2	A			1.7	A		
		SB	2.1	A			2.8	A		
	NW 138th Street & Service Road	SE	10.4	B	19.1	C	10.8	B	19.4	C
		NW	10.5	B			10.4	B		
		NE	13.8	B			23.7	B		
		SW	22.9	C			13.0	B		
	NW South River Drive & NW 122nd Way	EB	12.2	B	10.7	B	12.8	B	10.8	B
		WB	-	-			-	-		
		SE	7	A			7.3	A		
		NW	11.6	B			11.9	B		

TABLE 3.7-D
INTERSECTION CAPACITY ANALYSIS FOR 2028 – NO-BUILD SCENARIO

Intersections		Movement	AM PEAK PERIOD				PM PEAK PERIOD			
			Approach		Intersection		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNALIZED INTERSECTIONS	SR-25 (Okeechobee Road) & NW 138th Street	SE	290.4	F	203.5	F	259.6	E	204.9	F
		NW	80.6	F			186.1	F		
		NE	241.7	F			139.8	F		
		SW	29.4	C			195.0	F		
	SR-25 (Okeechobee Road) & NW 107th Avenue	SE	255.5	F	215.6	F	131.7	F	205.3	F
		NW	66.5	E			209.8	F		
		NB	331.4	F			290.3	F		
		SB	-	-			-	-		
	SR-25 (Okeechobee Road) & NW 121st Way	SE	46.5	D	41.4	D	29.1	C	14.5	B
		NW	29.5	C			1.9	A		
		NE	58.6	E			19.5	B		
		SW	-	-			-	-		
	NW 121st Way & NW South River Drive	SE	44.5	D	23.5	C	37.5	D	37.1	D
		NW	45.1	D			37.5	D		
		NE	18.9	B			32.5	C		
		SW	12.9	B			45.1	D		
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	31.0	D	2.5	A	27.9	B	2.0	A
		WB	24.0	C			0.0	A		
		NB	0.0	A			0.0	A		
		SB	0.0	A			0.0	A		
	NW 138th Street & NW 113rd Av Road	SE	7957.3	F	*	F	9081.2	F	1075.8	F
		NW	*	F			111.7	F		
		NE	0.0	A			0.0	A		
		SW	6.8	A			5.6	A		
	NW 107th Avenue & NW 127th Street	EB	*	F	453.5	F	7825.4	F	1414.5	F
		WB	*	F			182.8	E		
		NB	6.5	A			2.5	A		
		SB	3.2	A			3.8	A		
	NW 138th Street & Service Road	SE	10.9	B	40.0	E	11.3	B	41.4	E
		NW	11.0	B			10.8	B		
		NE	19.9	C			56.8	F		
		SW	54.1	F			17.0	B		
	NW South River Drive & NW 122nd Way	EB	13.6	B	11.7	B	14.4	B	11.9	B
		WB	-	-			-	-		
		SE	7.1	A			7.3	A		
		NW	12.8	B			13.3	B		

Note: * indicate no available gap resulting in very large delay values

The intersection LOS analysis reveals that due to the anticipated considerably increase traffic volume by the opening year of 2008, most of the area's primary access points will operate at LOS D or worse. LOS F was observed for the southeast bound approach at the intersection of SR-25 (Okeechobee Road) and NW 138th Street. This can be attributed to extremely high left turn vehicular movement utilizing just a single left turn lane. LOS E was observed for the northbound approach at the intersection of SR-25 (Okeechobee Road) and NW 107th Avenue during the AM peak period. This can be attributed to the relatively high left and right vehicular movements utilizing just a single shared lane thereby resulting in excessive delays. Also LOS F was observed for the eastbound movement at the intersection of NW 107th Street and NW 127th Street. This can be attributed to the fact that this intersection is a two-way stop controlled intersection with inadequate gaps in the relatively high North-South traffic volume for the left-turn and through east-west bound vehicular movements. Similarly, LOS E and F were also obtained for the southeast bound approach of NW 138th Street and NW 113th Av. Road for the AM and PM peak periods respectively.

By 2018 the intersections of SR-25 (Okeechobee Road) & NW 138th Street, SR-25 (Okeechobee Road) & NW 107th Avenue, NW 138th Street & NW 113th Av Road, NW 107th Avenue & NW 127th Street and NW 138th Street & NW 115th Avenue of the intersections will experience unacceptable LOS F for some of the approach movements resulting in an overall LOS E or F for these intersections.

By the design year in 2028, majority of the intersections will operate at unacceptable LOS E or worse.

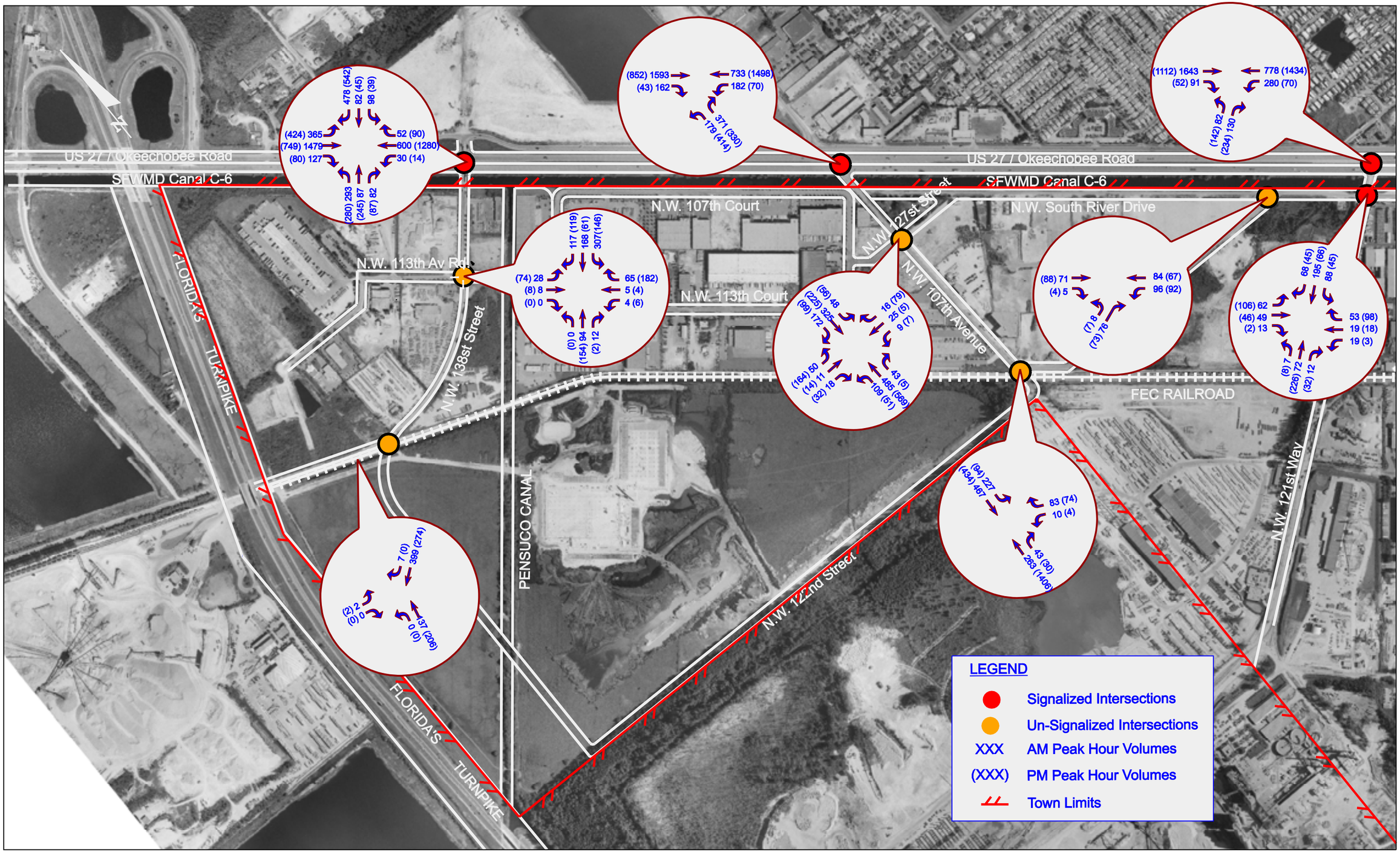

EXHIBIT 3-7

Future Intersection 2008 Peak Hour Turning Movement Volumes

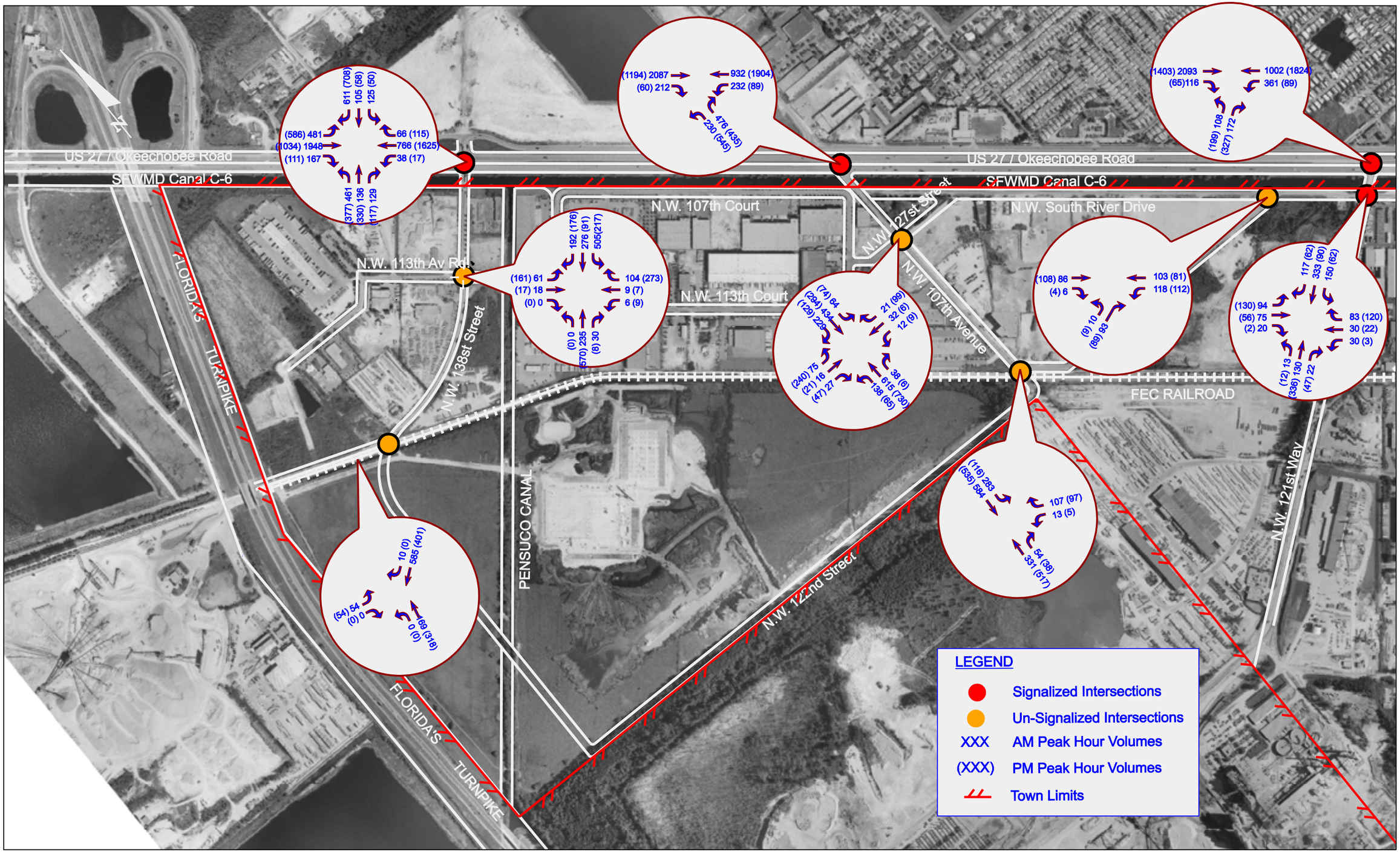

EXHIBIT 3-8

Future Intersection 2018 Peak Hour Turning Movement Volumes

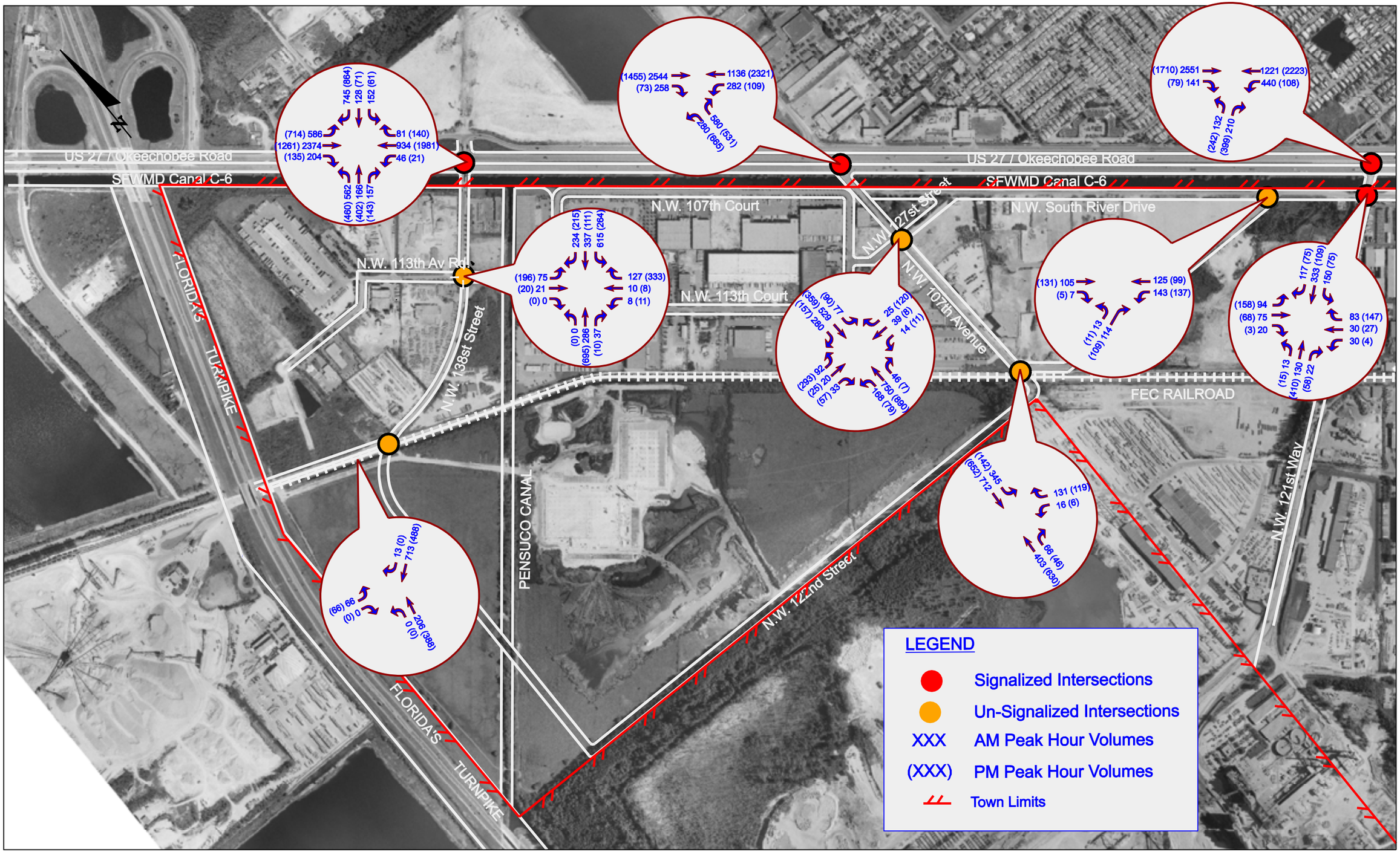

EXHIBIT 3-9

Future Intersection 2028 Peak Hour Volumes

4.0 ALTERNATIVES ANALYSIS

The following sections describe the different roadway improvement alternatives being considered, including the "No-Project" alternative as it relates to traffic. The focus of this study is to determine what the traffic impacts will be on the roadway network and their operational affects of the system. Considerations will be given to the need of adding additional through, right and left lanes at the intersections as well as modifications to the operational aspects of the corridor. Traffic impacts resulting from not addressing any improvements will cause increased delays, increased traffic back-up and operational problems within the roadway network.

4.1 Traffic System Management Alternatives

Traffic System Management Alternatives concern minor improvements such as advanced signalization, turn lane improvements and minor geometric improvements at the intersection. Several potential strategies exist and are addressed in this section.

4.1.1 Short-term Improvements

The short term improvements refer to intersection improvements that can be implemented within the next 5 to 10 years. These improvements are required in addition to the previously identified planned and programmed improvements identified in Section 3.4.2. This section describes the recommended short term intersection capacity improvements. Detail analysis results are shown in **Appendices P to S.**

4.1.1.1 NW 107th Avenue & SR-25 (Okeechobee Road)

4.1.1.1.1 Signal Warrant Analysis

A signal warrant analysis was conducted for the intersection of SR-25 (Okeechobee Road) and NW 107th Avenue. The existing traffic signal was installed as a temporary measure to address maintenance of traffic needs. These were required as part of the proposed Miami-Dade County improvements to the 138th Street Bridge which will be completed by 2008. The NW 138th Street bridge is not under construction at this time. The Town of Medley has an interest in maintaining this signal beyond the completion of the County construction project. In order to define the need for, and appropriateness of a traffic signal, the following warrants were analyzed:

- Warrant 1 – Eight-Hour Vehicular Volume
- Warrant 2 – Four-Hour Vehicular Volume

- Warrant 3 – Peak Hour
- Warrant 4 – Pedestrian Volume
- Warrant 5 – School Crossing
- Warrant 6 – Coordinated Signal System
- Warrant 7 – Crash Experience
- Warrant 8 – Roadway Network

These warrants are based on procedures and guidelines described in the manual on Uniform Traffic Control Devices (MUTCD) and the Florida Department of Transportation's Manual of Uniform Traffic Studies (MUTS). Warrants should be viewed as guidelines, not as absolute values. However, if no warrants are met, a signal should not be installed. Furthermore, satisfaction of a warrant is not a guarantee that the signal is needed. In all cases, at least one or more warrants must be fully met before a traffic signal installation is considered. The warrant analysis process is just one of the tools to be used in determining if a traffic signal is necessary. Engineering judgment should be exercised in making the final determination. The eight-hour turning movement counts collected for this study were used to determine if any of the warrants were met. (See **Appendix E** for the warrant analysis worksheets.)

Warrant 1: Hour Vehicular Volumes

Warrant 1 is comprised of two parts. The Minimum Vehicular Volume, Condition A, is intended where a large volume of intersecting traffic is the principal reason to consider installing a traffic signal. The Interruption of Continuous Traffic, Condition B, is intended where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Based on the eight hours of traffic volume data collected (2005), Warrant 1 is satisfied for both 100% and 80% level.

Warrant 2: Four-hour Vehicular Volumes

The Four-Hour Vehicular Volume signal warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Warrant 2 is satisfied for the 70 percent level of the four highest hours of data collected (2005).

Warrant 3: Peak Hour

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

Since the area under study could be described as an industrial complex, Warrant 3 was considered applicable. The warrant is satisfied with the volumes on the minor approach and the total entering volume. No unusual delays, however, were noted based on an LOS analysis of the intersection as it was formerly non-signalized with the preexisting geometry.

Warrant 4: Pedestrian Volume

The Pedestrian Volume signal warrant is intended where the traffic volume on a major street is so heavy that pedestrians experience excessive delays in crossing the major street.

There are no pedestrian facilities located at the intersection. Therefore, this warrant is not applicable.

Warrant 5: School Crossing

The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.

There are no schools in the vicinity of the intersection; therefore, this warrant is not applicable.

Warrant 6: Coordinated Signal System

Progressive movement in a coordinated signal system sometimes necessitates installing traffic signal at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

The signal is spaced more than half a mile from the other nearest one at NW 138th Street, thereby providing the necessary degree of platooning. Warrant 6 was, therefore, satisfied.

Warrant 7: Crash Experience

The Crash Experience signal warrant conditions are intended for applications where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

The intersection was not previously identified as a high crash location per FDOT; therefore, this warrant was not met.

Warrant 8: Roadway Network

Installing a traffic signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.

NW 107th Avenue is planned to connect further south of the study limits to NW 106th Street/Gran Park and is proposed to have a bridge located at NW 122nd Street. It is the only other connection to the industrial park area form SR-25 (Okeechobee Road) other than NW 138th Street.

Since warrants 1, 2, 3 and 6 are satisfied then signalization of the intersection is justified and should be maintained.

4.1.1.1.2 Bridge Widening

The single shared lane utilized by both the northbound left and right vehicular movements result in excessive delays and unacceptable LOS E as per the 2008 No-Build future Conditions analysis. It is recommended that **the existing two-lane bridge over the Miami Canal on NW 107th Avenue be widened to five lanes** to provide separate lanes for the northbound dual left and right vehicular movements by 2008. This will improve the LOS to an acceptable condition of LOS C.

4.1.1.1.3 Signal Coordination

Maintaining the traffic signal at this intersection will also enable the signals along the SR-25 (Okeechobee Road) to be effectively coordinated and allow smooth progression of vehicles through the intersections. Coordination of the traffic signals along the SR-25 (Okeechobee Road) is therefore highly recommended by 2008. The impact of this improvement is improved LOS from LOS C to LOS B for this intersection.

4.1.1.2 NW 107th Street & NW 127th Street

The 2008 future condition analysis for this intersection indicates excessive delays for the eastbound and westbound approaches. This can be attributed to inadequate gaps in the North-South traffic stream resulting from the two-way stop controls on these approaches. Capacity analysis indicates that left turning vehicles approaching the intersection from the east are queuing beyond the storage capacity.

It is recommended that **additional through lanes should be added to northbound and south bound approaches on NW 107th Avenue by 2008 to convert the existing two lane section to a four lane section.** This will ensure a homogeneous roadway section for NW 107th Avenue from SR-25 (Okeechobee Road) to the proposed bridge over the FEC Railroad. It is also recommended that

the two-way stop control at the intersection of NW 107th Street & NW 127th Street be converted to a four way stop control by 2008. This would significantly reduce the delays at the intersection, reduce the queue lengths of the left turning vehicles and improve the eastbound LOS from LOS F to LOS B. The right turn lane should be re-striped to a shared through/right turn lane.

Between 2008 and 2018 it is projected that the LOS for the northbound and southbound approaches will deteriorate significantly from LOS C to LOS F due anticipated high traffic volumes for these movements. A detailed signal warrant analysis and possible installation of a new traffic signal is therefore recommended for this intersection by 2018. This will improve the LOS at this intersection from LOS F to LOS B. Traffic signal coordination between this intersection and the SR-25 (Okeechobee Road) intersection will be required if the signal is warranted.

4.1.1.3 NW 138th Street & SR-25 (Okeechobee Road)

The 2008 No-Build future conditions for this intersection using the proposed intersection configuration (as per Miami-Dade County Public Works Department Project No. 2003191) show unacceptable LOS E for the northeast approach left turn vehicles. It is recommended that the northeast approach configuration be modified to dual left-turn and shared thru-right lanes while still maintaining the five lane section for the bridge. This will improve the LOS to an acceptable LOS D. LOS F was also observed for the southeast bound approach at the intersection of SR-25 (Okeechobee Road) and NW 138th Street due to extremely high left turn vehicular movement utilizing just a single left turn lane. Dual left turn lanes for this approach are recommended to improve the level of service from LOS F to LOS C.

The 2018 No-Build future conditions for this intersection show significant deterioration between 2008 and 2018. The capacity analysis indicates that the intersection will be operating at an unacceptable LOS E or worse for all the approaches. Very long queue lengths extending beyond the intersection of NW 138th Street & the Service Road to the northeast were also observed for the right turn vehicles approaching the intersection from the northeast. Also, Left turning vehicles approaching the intersection from the southwest were queuing beyond the storage capacity.

To mitigate this condition, it is recommended that **the right lane on the southwest approach of the NW 138th Street & SR-25 (Okeechobee Road) intersection should be channelized and made to operate as a free lane by 2008**. A merging lane would be required on the northwest bound approach of the intersection. An additional left turn lane is also recommended for the northeast approach by 2018. This improvement will however require the bridge section to be expanded from five lanes to six lanes to accommodate the additional lane.

These improvements will ensure that the intersection operates at an acceptable LOS D. Considerations for the widening of the bridge structure should be considered as part of the current Miami-Dade County bride replacement project. If this cannot be included in this project the bridge should be designed to allow for future widening of the structure.

4.1.1.4 NW 138th Street & NW 113th Av Road

Traffic conditions at this intersection are expected to deteriorate significantly between 2008 and 2018. Based on the 2008 No-Build future conditions, LOS E and F was obtained for the southeast approach left turn vehicles for the AM and PM peak periods respectively. To alleviate this condition, it is recommended that this intersection should be converted from a two-way to a four way stop controlled intersection by 2008. This new intersection control will improve the level of service from LOS F to LOS B.

By 2008, it is also recommended that the NW 138th street which is one of the principal arterials within the project limits should be widened from a two-lane to a three lane street from NW 113th Ave. Road to the FEC Railroad and subsequently to a four lane road by 2018 due anticipated high traffic volumes for the northeast bound and southwest bound movements. A detailed signal warrant analysis is therefore recommended for this intersection at that time to improve traffic operations particularly due to the southwest approach left-turn movement. Coordination with the signal at SR-25 (Okeechobee Road) should also be considered.

4.1.1.5 NW 121st Way & SR-25 (Okeechobee Road)

The 2008 future conditions indicate acceptable LOS C or better for all the intersection approaches. Currently the intersection operates as a turbo T intersection with two outside northwest bound lanes operating under free flow conditions while the inside northwest bound lane and the left turn lane are signal controlled.

The 2018 future conditions indicate an unacceptable LOS E for the northwest bound left turn vehicles. It is recommended that **an additional left turn lane should be added on the northwest bound approach of the NW 121st Way & SR-25 (Okeechobee Road) intersection** while maintaining three northwest free flow lanes by 2018. This will improve the LOS to an acceptable level of D.

4.1.1.6 NW 138th Street & Service Road

With the completion of the 138th street extension from 107th avenue to the SR-25 (Okeechobee Road) service road it is expected that traffic flow pattern at this intersection will change significantly. Most of the traffic currently using the service road will be diverted to the new extension. It is recommended that the northeast bound right turn lane should be re-striped to a shared through/right turn to reduce weaving movements and increase the capacity of the through lane. A two way stop control for the southeast and northwest bound approach is also recommended. The intersection is expected to operate at an acceptable LOS C or better for both the 2008 and 2018 future conditions.

4.1.1.7 NW 121st Way & NW South River Drive

The intersection is expected to operate at acceptable LOS during the analysis period. However the arterial LOS significantly deteriorates to LOS F between 2008 and 2018. **A 3-lane section is recommended by 2018 and subsequently a four-lane section by 2028 for the NW South River Drive** between NW 107th Avenue and NW 121st Way. This concurs with the recommendations from the previous study.

Tables 4.1-A to 4.1-D show a summary of the recommended short term intersections improvements and level of service for the study area.

TABLE 4.1-A 2008 INTERSECTIONS IMPROVEMENTS					
Intersection	**Recommended Improvements**				
	Movement	**Approach**			
		SE/EB	**SW/SB**	**NW/WB**	**NE/NB**
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2
	Through	3	1	3	1
	Right	1	1	1	S
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	1	1
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
NW 121st Way & NW South River Drive	Left	S	S	S	S
	Through	1	2	1	2
	Right	S	S	S	S
NW 138th Street & NW 113rd Av Road	Left	1	1	1	1
	Through	1	1	1	1
	Right	S	S	S	S
NW 107th Avenue & NW 127th Street	Left	1	S	1	S
	Through	1	2	1	2
	Right	S	S	S	S
NW 138th Street & Service Road	Left	S	S	S	S
	Through	1	2	1	2
	Right	S	S	S	S
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1
	Through	1	N/A	1	N/A
	Right	S	N/A	N/A	S

TABLE 4.1-B
2008 INTERSECTIONS LOS WITH SHORT TERM IMPROVEMENTS

	Intersection	Approach	AM PEAK PERIOD		PM PEAK PERIOD	
			Approach LOS	Intersection LOS	Approach LOS	Intersection LOS
SIGNALIZED INTERSECTIONS	US 27 / SR-25 (Okeechobee Road) & NW 138th Street	SE	C	C	C	D
		NW	D		D	
		NE	D		D	
		SW	D		D	
	US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	SE	B	B	B	C
		NW	B		C	
		NB	C		C	
		SB	-		-	
	US 27 / SR-25 (Okeechobee Road) & NW 121st Way	SE	A	B	B	B
		NW	A		A	
		NE	D		C	
		SW	-		-	
	NW 121st Way & NW South River Drive	SE	C	B	C	B
		NW	C		C	
		NE	B		B	
		SW	A		B	
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	C	A	B	A
		WB	C		A	
		NE	A		A	
		SW	A		A	
	NW 138th Street & NW 113rd Av Road	SE	A	B	B	B
		NW	A		B	
		NE	B		C	
		SW	B		B	
	NW 107th Avenue & NW 127th Street	EB	B	B	B	C
		WB	A		B	
		NB	B		C	
		SB	B		B	
	NW 138th Street & Service Road	SE	C	A	C	A
		NW	C		D	
		NE	A		A	
		SW	A		A	
	NW South River Drive & NW 122nd Way	EB	B	A	B	A
		WB	-		-	
		SE	A		A	
		NW	B		B	

TABLE 4.1-C 2018 INTERSECTIONS IMPROVEMENTS					
Intersection	**Recommended Improvements**				
	Movement	**Approach**			
		SE/EB	**SW/SB**	**NW/WB**	**NE/NB**
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2
	Through	3	1	3	1
	Right	1	1	1	1
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	2	2
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
NW 121st Way & NW South River Drive	Left	1	S	1	S
	Through	1	2	1	2
	Right	S	S	S	S
NW 138th Street & NW 113rd Av Road	Left	1	1	1	S
	Through	1	1	1	2
	Right	S	S	S	S
NW 107th Avenue & NW 127th Street	Left	1	S	1	S
	Through	1	2	1	2
	Right	S	S	S	S
NW 138th Street & Service Road	Left	1	S	1	S
	Through	1	2	1	2
	Right	S	S	S	S
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1
	Through	1	N/A	1	N/A
	Right	S	N/A	N/A	S

TABLE 4.1-D
2018 INTERSECTIONS LOS WITH SHORT TERM IMPROVEMENTS

	Intersection	Approach	AM PEAK PERIOD		PM PEAK PERIOD	
			Approach LOS	Intersection LOS	Approach LOS	Intersection LOS
SIGNALIZED INTERSECTIONS	US 27 / SR-25 (Okeechobee Road) & NW 138th Street	SE	D	C	D	D
		NW	C		E	
		NE	D		D	
		SW	B		A	
	US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	SE	B	B	B	B
		NW	B		B	
		NB	D		C	
		SB	-		-	
	US 27 / SR-25 (Okeechobee Road) & NW 121st Way	SE	A	B	C	B
		NW	B		A	
		NE	D		B	
		SW	-		-	
	NW 121st Way & NW South River Drive	SE	C	B	C	C
		NW	D		C	
		NE	C		C	
		SW	A		B	
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	D	A	C	A
		WB	C		A	
		NE	A		A	
		SW	A		A	
	NW 138th Street & NW 113rd Av Road	SE	B	E	C	C
		NW	B		C	
		NE	B		C	
		SW	F		C	
	NW 107th Avenue & NW 127th Street	EB	B	C	C	D
		WB	B		B	
		NB	C		F	
		SB	D		C	
	NW 138th Street & Service Road	SE	E	A	D	A
		NW	D		E	
		NE	A		A	
		SW	A		A	
	NW South River Drive & NW 122nd Way	EB	B	B	B	B
		WB	-		-	
		SE	A		A	
		NW	B		B	

4.1.2 Long-term Improvements

The long term improvements refer to roadway improvements that can be implemented within 10 to 20 years. The LOS for the majority of the intersections will be unacceptable by the design year in 2028 if no major improvements are undertaken within the project area. This section highlights the major improvements required from the long term intersection capacity assessment. Detail analysis results are shown in **Appendix T and U.**

4.1.2.1 Intersection Signalization and Coordination

The NW 107th avenue and NW 138th Street serve as the main access arterial into the project area. Due to anticipated high traffic volumes along these routes, it is projected that if no improvements are undertaken after the recommended 2008 and 2018 improvements, the intersections of NW 113th Ave. Road with NW 138th Street; and NW 127th Street and NW 107th avenue will experience LOS F. Signalization of these intersections is proposed to improve the capacity of these intersections. The impact of signalization is improved LOS from LOS F to LOS C for both intersections. Coordination of these new signals with the adjacent signals on SR-25 (Okeechobee Road) will also be required to effectively manage the traffic along these roadways by ensuring smooth traffic progression between the signals.

4.1.2.2 Intersection Grade Separation

The SR-25 (Okeechobee Road) Final Action Plan identified the possibility of constructing a grade separation at NW 138th Street and SR-25 (Okeechobee Road). Major reconstruction of this intersection as a Single Point Urban Interchange (SPUI) is recommended for consideration by the Florida Department of Transportation. Both the northwest and southeast bound SR-25 (Okeechobee Road) through lanes should be grade separated from the intersection and operate under free flow conditions with entrance and exit ramps connecting the grade separated through lanes to the at-grade intersection at NW 138th Street. This improvement is planned as part of the Miami-Dade Long range Transportation Plan for 2030. Analysis of the major intersections improvement is beyond the scope of this study hence the intersection capacity analysis for this improvement is not included in this report.

4.1.2.3 Other Improvements

NW 107th Avenue is planned to be extended from 122nd Street to NW 106th Street based on the 2032 Miami Urban Area Transportation Model (MUATS). The construction of this extension is expected to transform this arterial to a major north-south connector within the project area. Miami-Dade County is in the process of developing a planning study for

potential improvements for NW 107th Avenue from NW 138th Street to NW 106th street. The expansion of the NW 107th Avenue corridor will require at least a four lane facility which will affect the two-lane grade separation at the FEC railroad adjacent to NW 122nd Avenue. In addition the elevated intersection of NW 122nd Street and NW 107th Avenue will need to be expanded to incorporate NW 122nd Way. This will require a new grade separation over the FEC railroad for NW 122nd Way. The widening of NW 107th Avenue to a four lane facility will also affect the service roads at NW 122nd Street currently accessing the adjacent properties. Access to these properties will need to be addressed. These concerns should be addressed within the contents of the Miami-Dade County planning studies. In addition, the MUATS model needs to be carefully reviewed and updated in this area to provide a better reflection of the area network and trip distribution. This is beyond the scope of this current study.

Table 4.1-B shows a summary of the intersections LOS after implementation of the recommended long term improvements for the study area.

TABLE 4.1-E
2028 INTERSECTIONS IMPROVEMENTS

Intersection	Recommended Improvements				
	Movement	Approach			
		SE/EB	SW/SB	NW/WB	NE/NB
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2
	Through	3	1	3	1
	Right	1	1	1	1
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	2	2
	Through	3	N/A	3	N/A
	Right	1	N/A	N/A	1
NW 121st Way & NW South River Drive	Left	1	S	1	S
	Through	2	2	2	2
	Right	S	S	S	S
NW 138th Street & NW 113rd Av Road	Left	1	1	1	1
	Through	1	2	1	2
	Right	S	S	S	S
NW 107th Avenue & NW 127th Street	Left	1	1	1	1
	Through	1	2	1	2
	Right	S	S	S	S
NW 138th Street & Service Road	Left	1	S	1	S
	Through	1	2	1	2
	Right	S	S	S	S
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1
	Through	2	N/A	2	N/A
	Right	S	N/A	N/A	S

TABLE 4.1-F 2028 INTERSECTIONS LOS WITH LONG TERM IMPROVEMENTS						
Intersection		Approach	AM PEAK PERIOD		PM PEAK PERIOD	
			Approach LOS	Intersection LOS	Approach LOS	Intersection LOS
SIGNALIZED INTERSECTIONS	US 27 / SR-25 (Okeechobee Road) & NW 138th Street	SE	D	E	E	E
		NW	C		F	
		NE	F		F	
		SW	C		B	
	US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	SE	C	C	C	C
		NW	B		C	
		NB	E		D	
		SB	-		-	
	US 27 / SR-25 (Okeechobee Road) & NW 121st Way	SE	D	C	C	B
		NW	B		A	
		NE	D		D	
		SW	-		-	
	NW 121st Way & NW South River Drive	SE	D	D	D	C
		NW	C		C	
		NE	B		C	
		SW	D		C	
UNSIGNALIZED INTERSECTIONS	NW 138th Street & NW 115th Avenue	EB	E	A	C	A
		WB	C		A	
		NE	A		A	
		SW	A		A	
	NW 138th Street & NW 113rd Av Road	SE	C	C	C	C
		NW	C		C	
		NE	D		C	
		SW	B		B	
	NW 107th Avenue & NW 127th Street	EB	C	B	D	C
		WB	C		C	
		NB	B		C	
		SB	B		B	
	NW 138th Street & Service Road	SE	F	A	F	A
		NW	F		F	
		NE	A		A	
		SW	A		A	
	NW South River Drive & NW 122nd Way	EB	B	B	B	B
		WB	-		-	
		SE	A		A	
		NW	B		B	

5.0 TRAFFIC RECOMMENDATIONS

The recommended improvements and benefits are based on the assumption that the signals along SR-25 (Okeechobee Rd.) and those within the town boundaries will be properly synchronized. Furthermore the existing restriction of certain truck turning movements at the intersections with connections to SR-25 (Okeechobee Road) needs to be immediately addressed. The actual operational restriction resulting from the combination of large WB-40 and WB-50 trucks turning at the short bridge crossings also leads to extensive vehicular queues. The provision of four (4) lanes along the following arterials: NW 107th Avenue, NW 138th Street and NW South River Drive would dramatically increase the capacity and operation of these facilities as well as that of the intersections within the study area. In addition, future signalization coordination of NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th avenue intersections will greatly improve traffic flow and operations within the study area. However, due to right-of-way constraints and the availability of funding, a phasing plan for the implementation of the improvements is recommended as follows.

- ✓ **Immediate Needs**
  - o Contact Miami-Dade County Public Works Department and have them modify their bridge design on NW 138th Street to accommodate future needs. Structure needs to be constructed at a higher elevation to accommodate future widening needs or widened now to meet future needs. Traffic lanes exiting the town should consist of a dual left and a shared through right. In the future a separate right turn lane exiting the town would be necessary along the bridge. See 2018 recommendations.
  - o The traffic signal at NW 107th Avenue and SR-25 (Okeechobee Road) meets signal warrants 1, 2, 3 and 6. It will need to remain beyond the construction period of the current Miami-Dade Public Works project along NW 138th street.
  - o Confirm the availability of road right of way within the Medley west Industrial Area. Develop base maps, obtain title information and refine right of way needs for implementation of proposed improvements.
  - o Develop roadway plans and obtain permits required to allow for implementation of the 2008 improvements.
  - o Commence planning for the implementation of the 2018 and 2028 improvements including supporting Miami-Dade County and FDOT plans for improvements to the area roadways, as well as the implementation of the NW South River Drive Corridor Study requirements.

- ✓ **Phase I (2008):**
  - Construct a 5-lane bridge section over the Miami Canal on NW 107th Avenue.
  - Construct a 3-lane section for NW 138th Street from NW 113th Avenue Road to the FEC Railroad.
  - Construct a 4-lane section along NW 107th Avenue from SR-25 (Okeechobee Road) to NW 127th Street.
  - Convert the intersections of NW 113th Avenue Road with NW 138th Street and NW 127th Street and NW 107th avenue to 4-way stop control.
  - Provide dual left turn lanes on the southeast bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.
  - Coordinate the traffic signals along SR-25 (Okeechobee Road), at NW 138th Street and NW 107th Avenue.

- ✓ **Phase II (2018):**
  - Construct a 3-Lane section for NW South River Dr. from NW 127th Street to NW 121st Way. Assumes that this connects to the 3-lane section constructed under the recommendations outlined in the first study for NW South River Drive.
  - Widen the bridge at NW 138th Street and SR-25 (Okeechobee Road) intersection from a 5-lane section to a 6-lane section to enable the addition of an exclusive right turn lane on the northeast bound approach.
  - Widen the bridge at the NW 121st Way and SR-25 (Okeechobee Road) intersection from a 5-lane section to a 6-lane section to enable the addition of an additional left turn lanes on the northeast bound approach.
  - Provide channelization of the right turn lane on the southwest bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.

- ✓ **Phase III (2028):**
  - Expand NW 138th Street to a 4-lane section from NW 113th Avenue Road to the FEC Railroad
  - Widen NW South River Drive to a 4-Lane section from NW 107th Avenue to NW 121st Way. This is consistent with the previous study.
  - Provide traffic signals at NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th Avenue intersections.
  - Support FDOT efforts to provide a Grade separation of SR-25 (Okeechobee Road) over NW 138th street. The difference from the FDOT Action plan is elevating all the through lanes on SR-25 (Okeechobee Road) through the use

of a SPUI – Single Point Urban Interchange. This configuration allows for through movements and turning movements for NW 138th Street to occur beneath the structure thus accommodating more signal green time for these movements. The SR-25 Okeechobee Road through lanes would move traffic continuously above NW 138th Street. Access ramps would be provided on either side of SR-25 Okeechobee Road (similar to an interchange) to provide access to and from NW 138th Street onto SR-25 Okeechobee Road.

- ✓ **Other Issues**
  - NW 107th Avenue is planned to be extended from 122nd Street to NW 106th Street based on the 2032 Miami Urban Area Transportation Model (MUATS). The construction of this extension is expected to transform this arterial to a major north-south connector within the project area. Miami-Dade County is in the process of developing a planning study for potential improvements for NW 107th Avenue from NW 138th Street to NW 106th street. The expansion of the NW 107th Avenue corridor will require at least a four lane facility which will affect the two-lane grade separation at the FEC railroad adjacent to NW 122nd Avenue. In addition the elevated intersection of NW 122nd Street and NW 107th Avenue will need to be expanded to incorporate NW 122nd Way. This will require a new grade separation over the FEC railroad for NW 122nd Way. The widening of NW 107th Avenue to a four lane facility will also affect the service roads at NW 122nd Street currently accessing the adjacent properties. Access to these properties will need to be addressed. These concerns should be addressed within the contents of the Miami-Dade County planning studies. In addition, the MUATS model needs to be carefully reviewed and updated in this area to provide a better reflection of the area network and trip distribution. This is beyond the scope of this current study.